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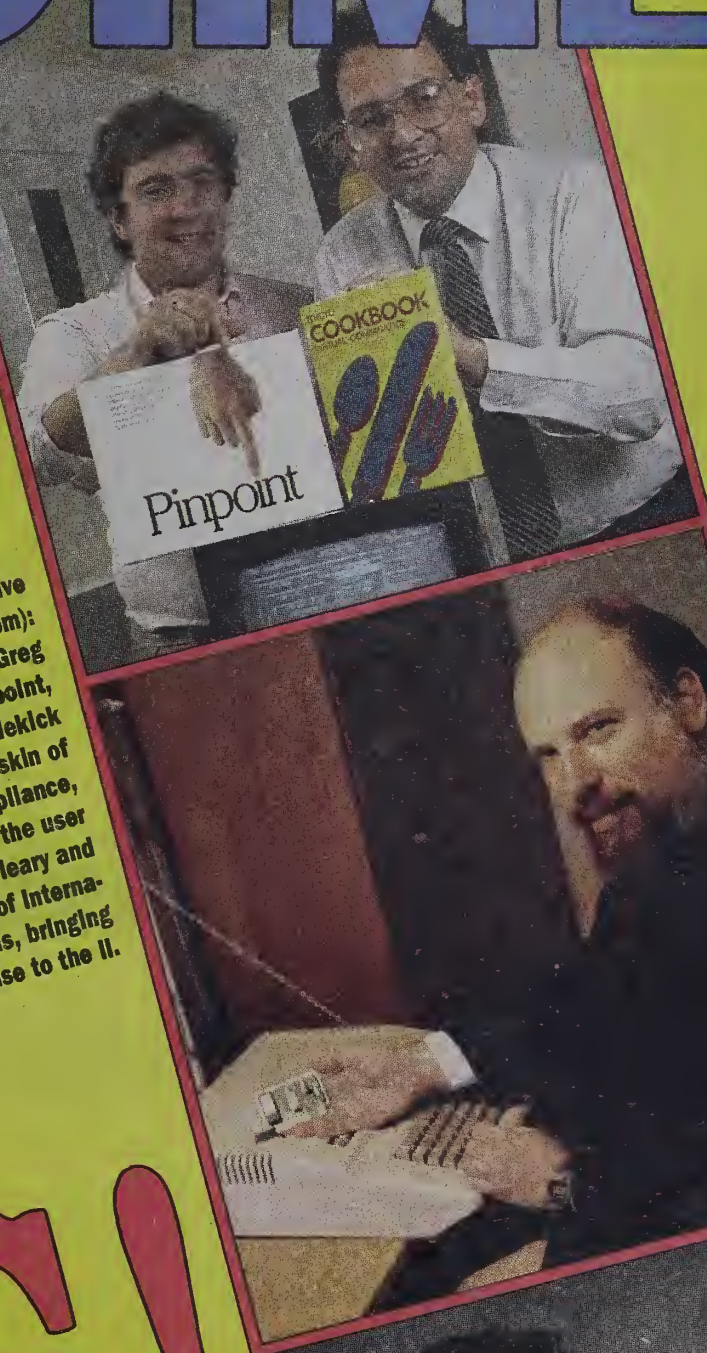

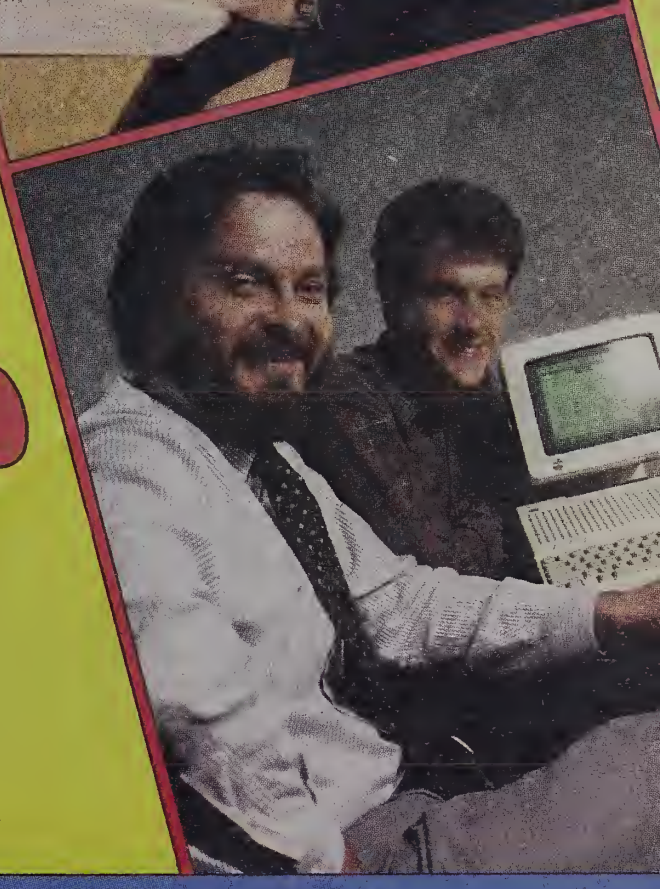

Keeping the Apple II alive (top to bottom): Brian Skiba and Greg Hastings of Pinpoint, cooking up a Sidekick workalike; Jef Raskin of Information Appliance, revolutionizing the user interface; Bill Cleary and Mark Kvamme of International Solutions, bringing the mouse to the II.

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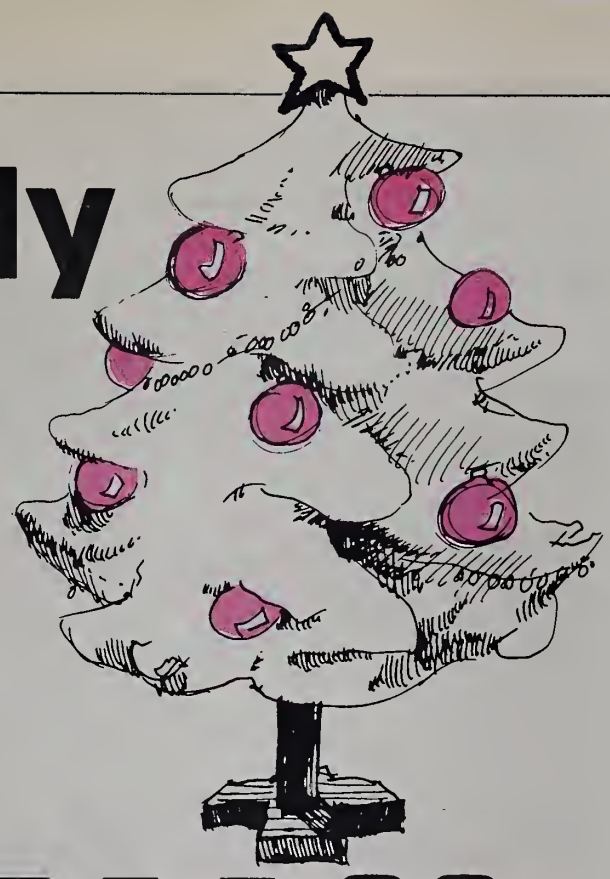

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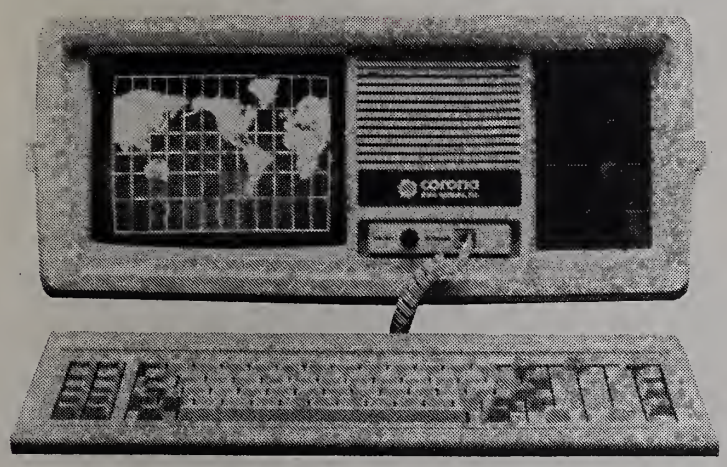

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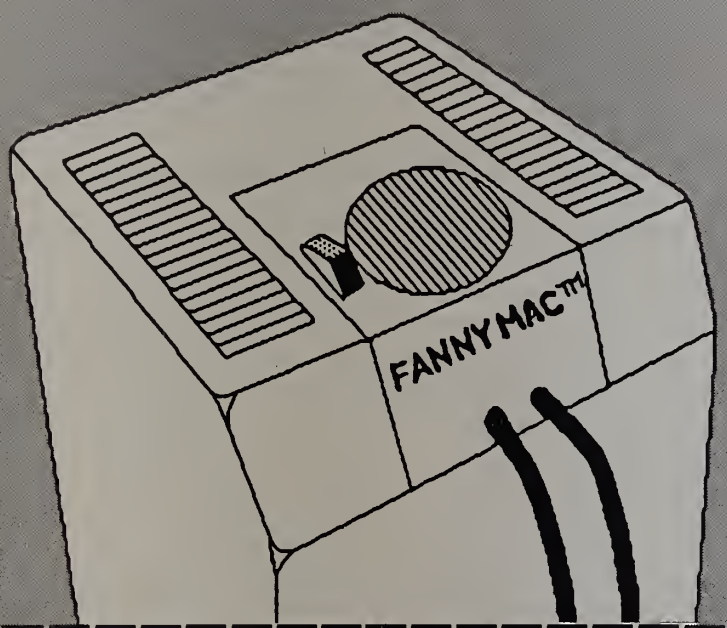

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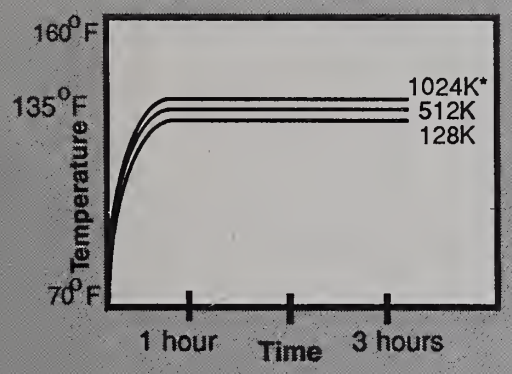

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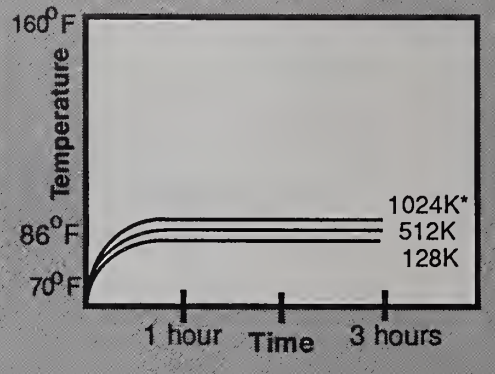

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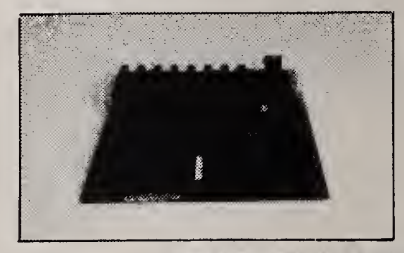
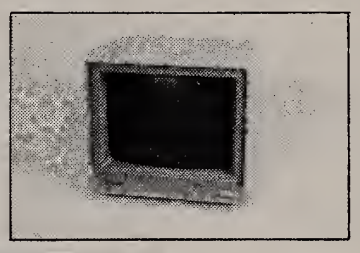
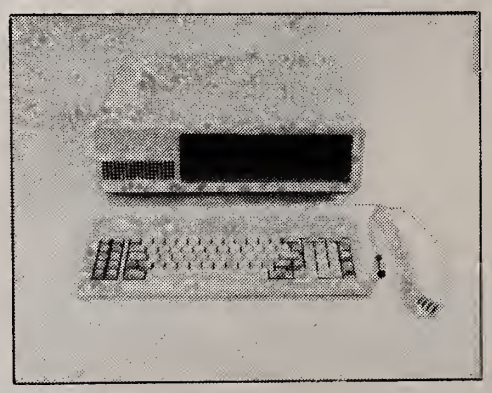
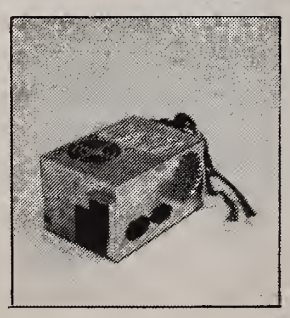
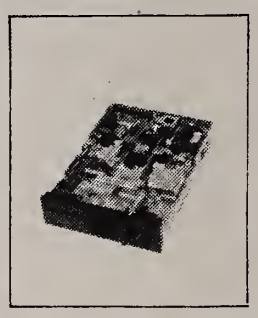
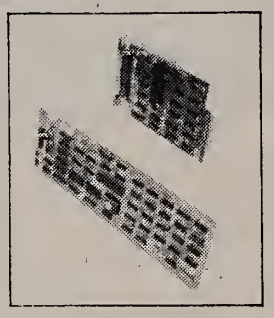

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EDIT MODE

Apple II: An American Hero

"All my life I knew I was going to have a microcomputer . . . The rest of the world didn't think microcomputers were going to amount to anything. I just thought, I've got a neat one for my house, I'm going to show others, I'm going to even show them how to build their own."

—Steve Wozniak, *creator of the Apple II, in "Hackers" video documentary*

He did, too, first with the Apple I kit, then with the Apple II. Wozniak and his fellow habitues of the Homebrew Computer Club had a vision of democratizing the computer—of getting its power out of the exclusive domain of faceless monoliths and into the hands of ordinary people. And the Apple became, on a grand scale, an irresistible invitation to personalized computing.

There was something fundamentally different about the Apple. From the beginning, it was designed for simplicity: accessible, easy to use, and as non-fearsome as its designers could make it. It was also promoted not as a nifty gadget for techno-wizards but as a nearly limitless tool, capable of enhancing people's lives in ways yet undreamed of, a computer for kids, grandparents and everyone in between.

As might be expected from a company in which "evangelist" and "visionary" remain official corporate titles to this day, Apple marketed its computer in ways that often defied common sense. It gave away thousands of machines to the schools of America, on the risky but ultimately well-founded assumption that (a) the schools would become so enamored of the computers that they'd buy more and (b) hordes of parents would buy computers to match the ones their children were using in school. Then, resisting the urge to follow the lead of traditional big-computer companies, which jealously guarded their technology and software and kept them all proprietary, Apple kept the II's architecture open, leaving slots for expansion products and encouraging outside developers to create improvements or adapt the machines to an enormous range of applications. Wozniak himself eventually was to spend huge quantities of his own money to sponsor a series of massive rock shows, at which hundreds of thousands of people gathered to hear the world's best bands—and get acquainted with strategically-displayed Apple computers between sets. "For the first few years of its existence," said one of the third-party developers we talked to for our story this month, "Apple didn't even care about money. It was on a mission. It was the most persuasive grass-roots marketing effort I'd ever seen."

Crazy as it may have looked to the more sober minds in the marketplace, Apple's strategy worked. People bought Apple IIs. They liked the machines and told their friends. Masses of outside developers, lured by the machine's open architecture, created an amazing array of add-on enhancements. Software developers lost no time in creating programs for as many applications as the human imagination could devise. And consumers, reassured that whatever they might decide to do with a computer, the Apple II could probably handle it, kept right on buying the machines, with the result that upwards of two million IIs, II+s, IIes and IIcs have been sold over the years, and a host of ancillary businesses exist to supply products to the Apple market.

Time may be catching up with the Apple II. There are those who maintain that its technology is obsolete, that it won't be able to survive in a marketplace that's become much more competitive in the years since the machine first appeared. Indeed, some of the II's current problems are due to its very success: arch-monolith IBM, when it decided to get into the personal computer business, copied the II's open architecture design to improve the PC's versatility; this feature, in addition to the machine's relatively advanced design and the proverbial fact that no corporate system buyer ever got fired for buying IBM, made the IBM PC the machine of choice in the business world.

Opinion seems fairly evenly divided as to how long the Apple II can survive—and thrive—in the world it helped create. For every nay-sayer who maintains that the II is already a dinosaur, there's someone who retorts that the machine's existing potential hasn't even been tapped.

Ultimately, the reason most people buy computers is to get a job done. Historically, usefulness and versatility have been the Apple II's strengths. How well it survives in years to come will probably depend on how well it continues to do the work that people need to get done.

—*Mary Eisenhart*

(Watch this space for the return of Don Hamilton, who'll be back next month from his European travels.)

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From Power Chords To Data Transfer: Shel Talmy's New Career

By Benjamin Krepack

If you're like most people, when you buy your first computer one of your biggest problems is how to get all the information you've got on paper into a form that the computer can use. Basically, you have two choices: the data can be entered by either a person or a scanner. Shel Talmy, the legendary '60s record producer, advocates the latter alternative. QuickScan, his new, fast-growing company based in Studio City, offers a unique scanning service with remote job capability and incredible turn-around time.

"We can potentially knock out a page every fifteen seconds," says Talmy. "People usually have years' worth of material they'd like to get onto the computer so that they can do something with it. We can do the scanning both in-house or on a mobile basis, because the machine we use is portable. I think we're the only company providing a mobile, on-site service like this."

Using the latest model DEST 213 scanner, QuickScan can take scripts, contracts, correspondence, mailing lists and anything else that's typed on paper, and transfer it directly to any computer system.

"Last year, the speed (of Optical Character Recognition scanners) averaged one page per minute," he says. "Besides the slow pace, there was a limited number of type styles the scanner would recognize. There were also problems when the scanner would pick up three-hole punch marks, recognize them as data, and stick error flags everywhere. With this new machine, the OCR technology has finally achieved a level of sophistication where I felt it was viable to start this type of service business."

Talmy says his company can normally do a scanning job for under one hundred dollars a day, and their normal turnaround time is 24 hours. "We can transfer as many pages in an hour as an expert typist can do in a week. Besides doing the actual scanning ourselves, we're also able to offer clients the option to lease the equipment from us for a certain number of weeks. We can provide our own personnel, or we can train theirs. We can even scan onto a disk, then send the information to a client, via modem, onto whatever system they happen to be using. We're very flexible about what we can offer because there's a lot of different needs out there, and a lot of different ways to get the job done."

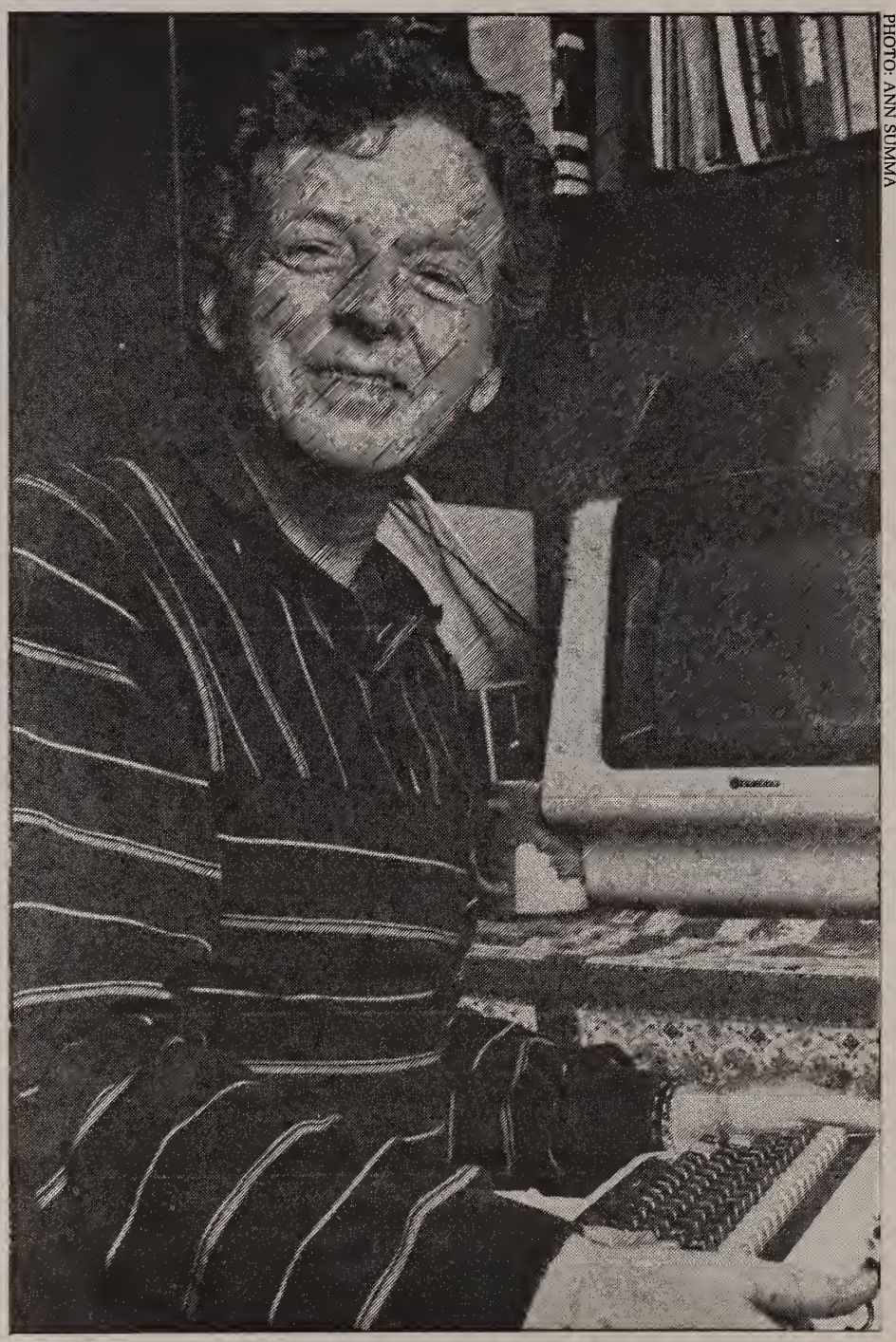

PHOTO: ANN SUMMA

Legendary rock producer Shel Talmy has a new career in the computer world.

Because of the growing number of "non-computer" people using computers these days, Talmy has discovered that many people have unrealistic expectations about what a scanning job can actually do. "Some people think that scanning documents will create a picture-perfect reproduction of the material," he says. "This, of course, is not the case. Technology has not reached that yet. Perhaps at some time it will — maybe three or five years down the road. But because of this frequently mistaken notion, we have to be very careful in defining what exactly we do. We're a data transfer company, saving the one entire step of having to sit down and type everything into the computer. Once the information is on a computer disk, the data then have to be formatted, edited and proofed. We're happy to do that work too, but of course there's an added charge."

Talmy believes that his company offers the perfect solution to one of the problems that most commonly prevent people from computerizing in the first place. "Everyone automatically thinks they will have to sit down and type everything in," he says. "It's a real revelation when they learn about us. We're even talking to several systems companies that figure they can increase their computer sales tremendously by offering their potential clients our method of getting all the material into the computer in the most painless way possible."

Knowing of the incredible demand for a quality scanning service, Talmy expects to expand and franchise his company within the next year. "Even with the sales downturn," he says, "there will be six to eight million computers being sold this year, and even more next year. All of these buyers will have to solve the same problem: how do they get their information into their computer so they can use it? I don't have enough facts to talk about non-English speaking countries at this point, but to begin with, I'd like to see a number of scan operations in all of the major cities in the country. We're looking at ourself as becoming the P.I.P. of the scanning industry."

Before getting into the scanning service business, Talmy was best known as the mid-'60s record producer who took a chance on many unknown English rock bands, including The Who and The Kinks. So what brought this prodigious producer of power-chords into the computerized scanning field? "I still like change and I still like excitement," he says. "Even in the recording studio, technology has always interested me. This type of business tends to keep me at the forefront of that technology simply because it's a service that everyone with a computer needs." (QuickScan, 11468 Dona Teresa Dr., Studio City, CA 91604, (213) 650-4990.) — *Benjamin Krepack*

Correction

In the advertisement for THE BUSINESS DISTRIBUTORS, INC. in our last issue, the price of *TAS Accounting With Source Code* was incorrectly listed as $149. The correct price is $249. We apologize to those who have been inconvenienced by this printing error.

Your Best Business Combination

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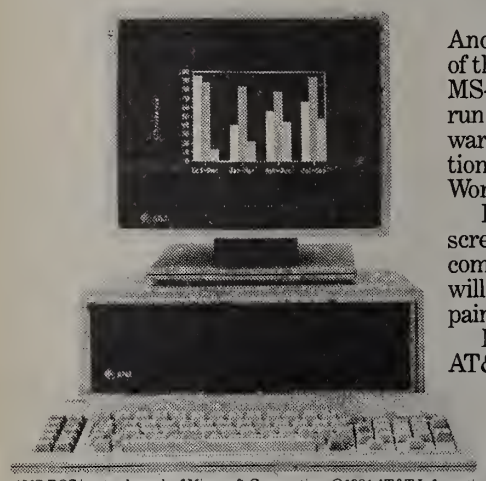

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Complete System As Low As $1629

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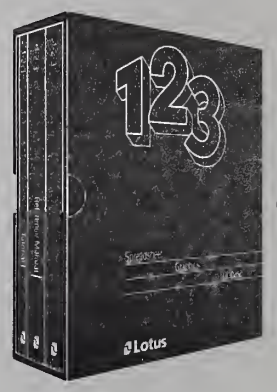

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Kaypro Introduces Its PC

The Kaypro Corporation made two announcements at a champagne party on the top floor cabaret of San Francisco's Sir Francis Drake Hotel on October 26. Jim Fogo, Kaypro's regional sales manager for San Jose, announced that the company is introducing a traveling van for dealer parts resupply and demonstrations. (The van will be making an appearance at the BAKUP (Bay Area Kaypro Users and Programmers) meeting on the third Tuesday of November).

The major announcement, though, was the unveiling of the Kaypro PC, an MS-DOS/PC-DOS, completely IBM compatible desk top computer system priced at a competitive $1595.

The Kaypro PC is a 16-bit 256K RAM machine available with color or monochrome (green on black) monitors. The system is bundled with a software package that includes *WordStar, CorrecStar, StarIndex, MailMerge, Mite Polywindows/KDESK*, and *GW-BASIC*. It has an internal clock-calendar, two 5¼" disk drives for DSDD disks, and expansion slots for addition of hard disk and additional RAM boards. The Kaypro PC has been described by a dealer as having a keyboard of the IBM PC-AT type, along with the expandability of the XT. The power supply is large enough not to be strained by the additions of hard disk or other components. Other optional add-ons include a speaker and boards to expand memory to 640K. There are nine expansion slots in the design of the Kaypro PC. There are both a serial and a parallel port for output, and a key locking the front panel can prohibit unauthorized usage.

Kaypro stresses the importance of their 1000-dealer network, both for availability of parts and for maintenance. The company assures 100% compatibility with IBM PC-AT and PC-XT. —*Robert D. Athey, Jr.*

Calendar of Events

November 7 "An Evening With Andy Hertzfeld," Santa Ana Civic Center, Police Annex, Bldg. 23, corner of Ross St. and Santa Ana Blvd., Santa Ana. Free to members (with card) of Macintosh Computer Society. $5 to non-members.

November 7–10 5th Los Angeles Computer Showcase Expo, LA Convention Center, North Hall. (714) 476-2300 for information.

November 8–December 1 Computer Art Show, Computer Arts Institute, 5627 Paradise Drive, Corte Madera, CA. Call CAI at (415) 924-6955 for information.

November 9 Network Business Seminar, 10 am-12 pm. Seminar and demo featuring networking, hardware and software products of Novell, Inc. MicroFlash Training Center, 1110 Burnett Ave., Concord. Limited seating, preregistration required. $15. Call Dennis Bowman for information and registration: (415) 680-1157.

November 12–14 Corporate PC Conference, Los Angeles Airport Hilton, (213) 450-0500 for information.

November 16 Bay Area Computer Swap, Santa Clara County Fairgrounds, San Jose. Exhibitor and show information, call (415) 340-9113.

November 16 CADCAM Business Seminar 10 am–12 pm. Seminar and demo featuring Autocad software and Nicolet plotters. MicroFlash Training Center, 1110 Burnett Ave., Concord. Limited seating, preregistration required. $15. Call Dennis Bowman for information and registration: (415) 680-1157.

November 17 San Francisco—dBase III programming class—no beginners. Call Darrell Bross (415) 586-5788 for information.

November 18–19 Westech Career Expo—Technical. Expos in Los Angeles and San Diego, free to attendees. Call Laurie Watts, AmeriComm Corporate Communications, (408) 988-8771 for information.

November 18 XT Compatible Club, San Francisco. Lincoln University, Room 101, Turk and Masonic. Demo on how to assemble a complete IBM XT compatible for $950. Free. (415) 668-0913.

November 24 San Francisco—dBase Techniques & Tricks in Programming—no beginners. Call Darrell Bross, (415) 586-5788 for information.

December 1 dBase II Programming Class, San Francisco, no beginners. Call Darrell Bross, (415) 586-5788 for information.

December 2 XT Compatible Club, San Francisco. Lincoln University, Room 101, Turk and Masonic. Demo on how to assemble a complete IBM XT compatible for $950. Free. (415) 668-0913.

December 14–15 Golden Gate Computer Expo, Oakland Coliseum. Also special vertical market section: Rx For Health Care Professionals, sponsored by FOCUS, Federation of Computer Users in the Medical Services. Call (415) 459-1998 for details.

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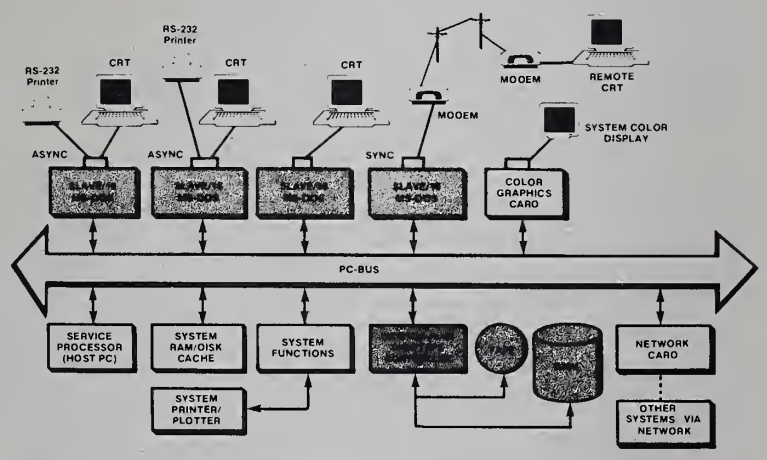

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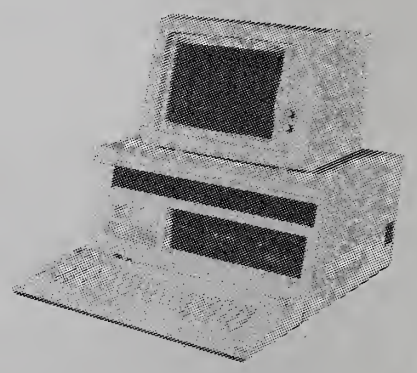

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Hayes Smart Modem 1200	395
Cermatik	250
Promodem 1200	315
Bizcomp XL	370

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Hercules Mono/Color Graphics	325/190
Paradise Graphic Board	285
Paradise Multi-Display	310
Everex Graphic Edge	400
Tecmar Graphic Master	420
AST 6-Pak Plus	249

PRINTERS

Epson FX-85/185	$390/$520
Epson LQ-1500	1020
Okidata 192/193	349/499
Okimate 20 w/plug-n-play	240
Brother DX-15XL	378
Brother HR-25/HR-35	599/868
Toshiba P351	1245

MONITORS

IBM Monochrome/Color	$250/580
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Amdek 600 Color	450
Taxan Color	CALL
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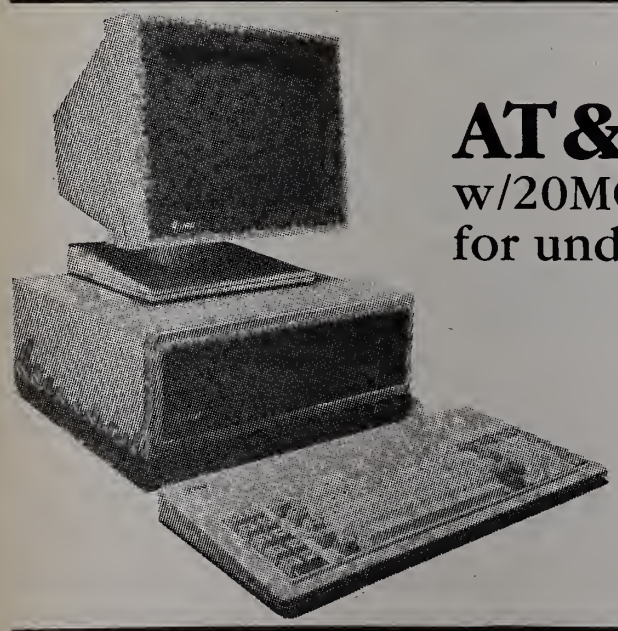
P.G.S. HX-12	465
P.G.S. SR-12	550



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FORMATTERS

Media Master 1.01

A Formatter/Copier For Incompatible Computers

Published by: *Intersecting Concepts*
For: *CP/M*
Price: *Under $50*
Reviewed by: *Robert D. Athey Jr.*

The vast multiplicity of computer brands need not have been isolated from each other. However, the feeling was (and is, among many computer manufacturers) that with a unique disk format, the manufacturer might be able to control who supplies program disks to the user. Some sharp individuals (among them, Mark Graybill of MDG and Associates) decided they could design a program that could format the disk of one computer to fit another, simply by controlling the commands the computer gave the disk-write-head during the formatting operation. MDG (which recently changed its name to Intersecting Concepts), called its product *Media Master*; the program is now available for CP/M and in an enhanced version for CP/M PC-DOS and MS-DOS.

This evaluation was done on a Kaypro II (pre-1983), using *Media Master* version 1.01, though Mark Graybill promises that the new CP/M will be out shortly. Our evaluation was to time the operations (in comparison to times measured for similar operations done by the CP/M utility programs) and to ship the disks formatted to PC-DOS 2 to an associate who uses the IBM PC to check out the *NewWord* files we copied using his *WordStar*.

As you may have seen in earlier discussions, I am not so enamored of speed that it is a main point. My concerns are that the programs be transferred accurately to the new format, and that I have many formats available. The files were indeed accurately transmitted, including the resume of a friend who was able to get it beautifully laser printed in a large facility (an improvement over my old dot matrix printer with Kaypro letters).

The formats available for translation to/from are shown in Table 1. The list certainly covers the larger number of computers being used in the world, but there are many others it could reach, as well. I hope the upgraded versions of this program include many more computer brands.

The times to do the operations were determined with an electronic stopwatch, in triplicate. The differences between trials were small enough to be simply stopwatch manipulation error, and no statistical treatment of time data was deemed necessary. The timing results are shown in Table 2. We see formatting by *Media Master* version 1.01 is reasonably fast — as fast as the CP/M 2.2e by Plu*Perfect, and faster than the standard CP/M 2.2 utility. We also see that *Media Master* version 1.01 verifies the formatting, and quickly, too. That is a very nice feature. One may get that verification separately, and quickly from most of the CP/M utilities.

We show the copying evaluation of times in Table 3. *Media Master* version 1.01 copying was only moderate in speed, at a rate of a little less than a Kbyte per second. We also see some faster copying by some of the CP/M utilities, with copying rates at nearly 1.5 and 3.1 Kbytes/sec. (Intersecting Concepts, 4573 Heatherglen Ct., Moorpark, CA 93021 (805) 529-5073.)

TABLE 1
COMPUTER FORMATS
FOR MEDIA MASTER
Version 1.01

Osborne (DD and SD)	NEC C-8001A
DEC VT 180	Actrix
IBM PC CP/M	Cromemco
IBM PC-DOX 1.0 and 2.0	w/Int'l Term
TI professional CP/M	Cromemco CDOS
TRS IV CP/M+	(SD and DD)
TRS-80 I w/Omikron	Lobo Max-80
TRS-80 III w/Mem Merch	Morrow MD2
LNW-80	KayPro II
Xerox 820 I (SD)	Zenith Z90
Xerox 820 II (DD)	Heath Z100 CP/M
Systel II CP/M	Heath w/Magnolia

TABLE 2: COMPARISON OF FORMATTING TIMES
FOR MEDIA MASTER version 1.01 AND STANDARD CP/M UTILITIES

PROGRAM USED	FUNCTION	NO. KBYTES	TIME, in seconds
MEDIA MASTER Version 1.01	Formatting for Osborne	186	21 (45 with verify)
	for PC.DOS 2	186	20 (45 with verify)
CP/M 2.2 Feb. '83 upgrade	Formatting	186	43—no verify
CP/M 2.2e	Formatting	186	25—no verify

TABLE 3: COMPARISON OF COPYING TIMES
FOR MEDIA MASTER version 1.01 AND STANDARD CP/M UTILITIES

PROGRAM USED	FUNCTION	NO. KBYTES	TIME, in seconds
MEDIA MASTER Version 1.01	Copying for Osborne	12	14—no verify
CP/M 2.2	Copying	186	138—with verify
CP/M 2.2e	Copying	186	53—no verify
NEWSWEEP	Copying	12	8—no verify

GRAPHICS SOFTWARE

Easy Graph

Published by: *Grolier Electronic Publishing*
Created by: *Intentional Educations, Inc. (1984)*
For: *Apple II family computers; 64K RAM required, graphics printer highly recommended, runs under DOS 3.3 or ProDOS; separate version required for the IIc*
List Price: *$39.95; school ed. $49.95 lab book $99.95*
Reviewed by: *Mike Markowitz*

Any school with an Apple computer should own this program. Any math or social science teacher whose curriculum includes the graphic presentation of quantitative information will be able to use it to good advantage. The package says "For ages 8 to adult," and this is literally true. The sixth grader who is just learning what a pie chart means and the engineer who needs one quickly for an important meeting will both benefit from *Easy Graph*.

The package lives up to its name. The 24-page manual is full of clear explanations and good examples, but the program includes its own optional introduction and tutorial. While clearly intended for children ("the case of the missing birthday cake") it is so user-friendly that even an adult can follow it. Wherever you wander in *Easy Graph*, your choices are always shown, and there is provision for graceful recovery from errors. We know that beginners often forget to press the <return> key, for example, but *Easy Graph* meticulously prompts the learner to do this.

You can make three kinds of graphs: a pictograph, a bar graph (or "histogram" to you statisticians out there) or a pie chart. These may not be as fancy as the ones you can make with *Lotus 1-2-3*, but they do not take all morning, either. To set up your graph you simply fill in some blanks in a little dialogue with the program:

> In this pie chart, I will show how _____
> is divided among several _____.
> I will compare the _____
> of these _____.
>
> Press ? for examples. Fill in each blank.
> <-- to erase. RETURN after each entry.

Although this may look like the old party game "Mad Libs," what is actually happening is that the program is requiring the user to think. This is computer-based learning at its best. Since teachers are less and less inclined to require their learners to think, it is urgent for software to start doing it!

A pictograph may use any of 20 symbols, selectable by moving the cursor over the desired symbol and pressing <return>. They include a human figure, a dog, a dollar sign, a snake, an ice cream cone, an airplane, an oil barrel, a mug, a heart, a circle, a triangle and a plus sign. Unfortunately, you cannot edit your own shape table (this would have made the program far more complex for the user, and a bit more work for the programmer.)

A pictograph or a bar chart may have up to six line items. A pie chart may have up to eight sectors. These limits may seem severe, but they are consistent with traditional principles of good graphic design and layout. Names are limited to eight characters, which is a tough restriction. Titles may be a generous 30 characters long, including spaces.

Scaling the graph is handled automatically by the program. This gives results that some users may find a little awkward. The largest line item in the pictograph gets ten symbols (or less if it is an

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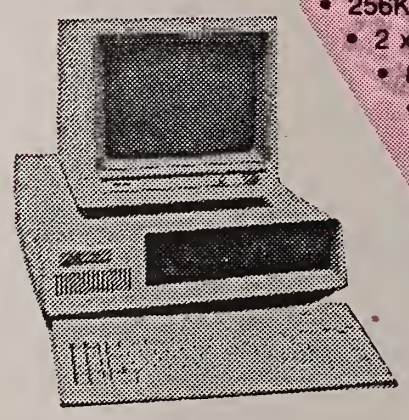

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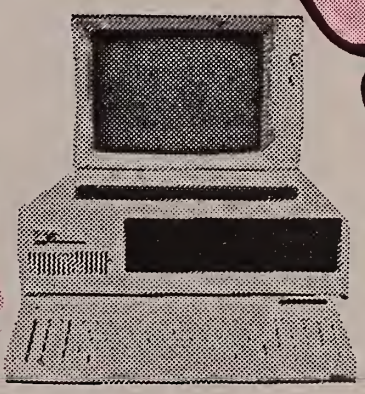

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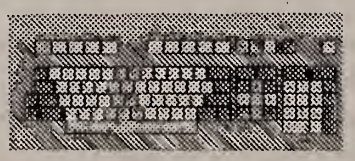

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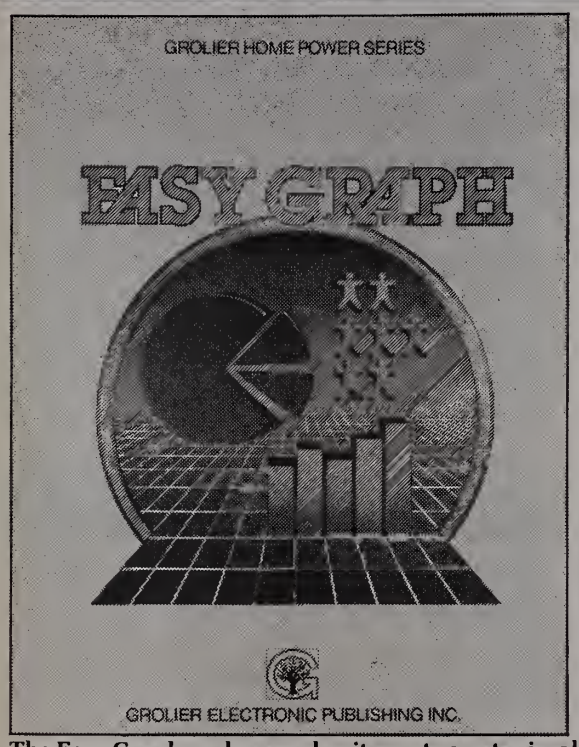
GRAPHICS SOFTWARE



The Easy Graph package makes it easy to create visual presentations on an Apple II.

integer smaller than 10) and the others are scaled proportionately. In the first graph I made, this meant that one airplane symbol stood for 28.80 planes. The unit size is printed as part of the graph.

The designers made a tough choice in this program: there is no way to save any data to the disk. The disadvantage is obvious—you cannot store your work for future reference or build a data base with this product. The advantage is in ease of use—file management under DOS is usually the most frustrating and difficult thing for a beginner to master. There is always the risk of trashing the program by trying to save something over it.

The printer dump function works with any Epson-compatible dot matrix printer, and certain others (any printer using the Orange Micro card, for example.) We tested *Easy Graph* with a Franklin computer connected to an Epson MX-80, and with an old Apple II+ connected to a Hewlett-Packard Thinkjet. Both configurations worked fine, although we had to reset some DIP switches on the Thinkjet.

For the Apple IIc a separate version of the program is required. This must be obtained by exchanging the original disk with the publisher.

The print quality is good, although the type face chosen has some nasty jaggy line effects. More legible fonts certainly can be printed on a dot matrix. With a good ribbon, a printout could easily be used to make a transparency for an overhead projector. (This is a major use for graphic presentations.)

There is no support for color printers, although the bar graphs are displayed in alternate green and blue on color monitors. The program is fully effective in monochrome.

An annoying feature of *Easy Graph*'s printer dump is that after printing a graph ("sideways" on the paper) it does not automaticlly advance to the next top-of-form. It just stops in the bottom third of the page. If you print a series of graphs, every one after the first will have the perforations of the paper running down the middle. You must use manual line feeds to reset the top-of-form after every graph. This is sloppy design.

Easy Graph is copy-protected. It appears to be written in Pascal, but the disk refuses to be catalogued. Aside from the usual 90-day limited war-

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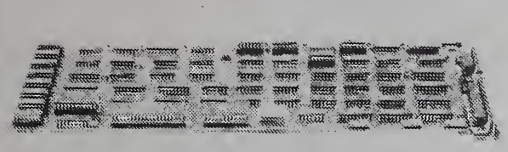

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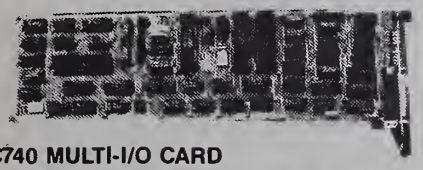

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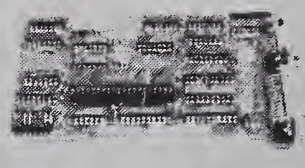

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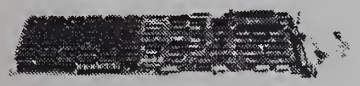

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"Be Prepared" To Select Your System	10:30 am-11:30 am
Business Solutions: Small Scale Manufacturers	Noon-1:00 pm
All About Word Processing	1:30 pm-2:30 pm
Business Solutions: Service Industries	3:00 pm-4:00 pm
All About Spreadsheets	4:30 pm-5:30 pm
FRIDAY	
"Be Prepared" To Upgrade Your System	10:30 am-11:30 am
Business Solutions: The Accounting Realm	Noon-1:00 pm
All About Graphics	1:30 pm-2:30 pm
Business Solutions: The Retail Overview	3:00 pm-4:00 pm
All About Database	4:30 pm-5:30 pm
SATURDAY	
Business Solutions: Personal Investing	10:30 am-11:30 am
All About Spreadsheets	Noon-1:00 pm
Business Solutions: Doctors and Dentists	1:30 pm-2:30 pm
All About Database	3:00 pm-4:00 pm
"Be Prepared" To Select Your System	4:30 pm-5:30 pm
SUNDAY	
"Be Prepared" To Select Your System	10:30 am-11:30 am
All About Word Processing	Noon-1:00 pm
"Be Prepared" To Upgrade Your System	1:30 pm-2:30 pm
All About Graphics	3:00 pm-4:00 pm

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ranty there is no provision for backups. An 800 telephone number for "information and services" is provided, however. Credits for all the programmers and writers are given in the manual, and on the initial screen as the program boots up. This is an encouraging trend. Software people should be entitled to some pride of authorship in their work. In the long run, it will make for better products.

While *Easy Graph* will never replace *pfs Graph* or similar products, it is a solid educational program, and fun to use. (Grolier Electronic Publishing, Sherman Turnpike, Danbury, CT 06816, (800) 858-8858.)

DIAGNOSTIC

Memory Minder

Published by: *J & M Systems, Ltd.*
For: *Various*
Price: *$49.95*
Reviewed by: *Robert D. Athey Jr.*

The computer you've been using for months is starting to find bad sectors on every old disk you resurrect for that file you meant to work on. The disks you send to a friend to copy a cute utility or game program, or the disk you sent to an editor with an article you wanted published—they're all sent back with notes saying "I can't read your disk because of the bad sectors." What's going on? Well, there might be bad sectors, due to the dirt that accidentally got on the disk surfaces (but you know you are too careful for that to happen, don't you?). BUT . . . there may be another reason—that has *nothing* to do with bad sectors.

The disk you put into the disk drive has the reading head clamp down on it as soon as you close the little door. The reading head assumes that the disk is correctly aligned with it, and that the disk will rotate at the appropriate speed to be read. The head also assumes that the disk has all its tracks aligned for reading the way the reading head wants to sense (see? feel?) the tracks. When the computer is new, you can be assured that the reading head is correctly aligned and rotates at the correct speed. However, as with all mechanical devices, there is wear on the high speed rotating head, on its bearings, and even on the set screws that keep the head aligned. So, in time, the disk drive and reading head may not be so well aligned, or the speed may be off, or any number of other ailments may crop up.

The manager of a local computer store's repair section recently told a users group that they should have their disk drive checked every 500 operating hours, just to make sure no troubles are starting. That sounded reasonable to me—until I counted up the hours I had on my Kaypro II since I bought it three years ago, and it turned out to be 4000 to 5000 hours. However, he did say one could wait until signs of trouble—squeaking or squawking noises, grinding or such—materialized. The evidence I eventually saw was the BAD SECTOR messages.

The *Memory Minder* was on display at the Golden Gate Computer Expo, and my query of the J & M Systems people on my problem led them to offer the program to me. I immediately went home to try it out, and was an expert on its use within a very few minutes. It is that easy to use. It told me that I had a problem in one drive, and the documentation told me how to fix it. I took it to a repair shop instead, as I am not a do-it-yourself type.

Memory Minder is a two disk package. The

BUSINESS SOFTWARE

Kaypro version comes with two programs on the program disk, one for the old Kaypro II and IV models, and one for the Kaypro 2, 4 and 10 models. Other computers have a version of the program called DDA. The program disk is put in one drive (not the one to be tested) to monitor the testing of the other drive. The other disk is the "diagnostic disk," to be put in the drive to be tested. You then call up the program from the program disk by simply typing in "DDA" (or "MMK24" for my Kaypro). You are treated to the simple menu that lets you choose among the eight tests you can run, along with the control specifying which disk drive you are testing.

Memory Minder runs eight tests:

1. Clamping Test (to check how well the disk is grabbed by the drive and reading head);
2. Spindle Speed (should be 294 to 306 rpm);
3. Index Hole Timing (elapsed time from leading edge of index hole to beginning of sector mark should be in the range of 100 to 300 microseconds);
4. Alignment Sensitivity (tests an inner, a middle and an outer test track for placement with respect to the disk drive spindle axis, in mils—thousandths of an inch);
5. Head Alignment (same as above, for the reading head);
6. Directional Seek (evaluates the precision with which the read head is positioned over a specific test track in several trials);
7. Head Rotation (tests the tracking of the head rotation with respect to the disk rotation for a match); and,
8. The Quick Test (a trial run of all the above tests, with an evaluation of "Good," "Marginal," or "Poor" shown, rather than the detailed report given by the individual tests).

Each of the detailed tests presents a screen with a histogram showing the test results graphically, along with a scale showing what the desired result is at a center point. The program also offers an analog alignment aid feature for those who would repair or adjust the drive or head. Each test offers a menu of actions that may be chosen.

The documentation is easy to read and use. Even the non-technical person (like myself) may use this program productively, as the documentation guides you through the details, gives clues as to what the drive is doing and what it is supposed to do. You are even briefly told by the booklet how to fix what is wrong, if you are so inclined and so adept. However, this package will tell you when to or when not to take the computer to the shop, if you choose not to open what appears to be a Pandora's box to you and me. (J & M Systems, Ltd., 137 Utah NE, Albuquerque, NM 87108.)

UTILITIES

SmartKey, version 5.0

By: *Software Research Technologies*
For: *IBM PC, XT and compatibles, DOS 2.0 or later*
Price: *$49.95*
Reviewed by: *Bennett Falk*

SmartKey is a "keyboard utility," a program that functions as an accessory to the usual operating system and application software you use. "Keyboard utility" is probably better defined by the types of programs called keyboard utilities than by a particular set of features. Most of the keyboard utility software on the market presently will allow you to redefine the meaning of most of

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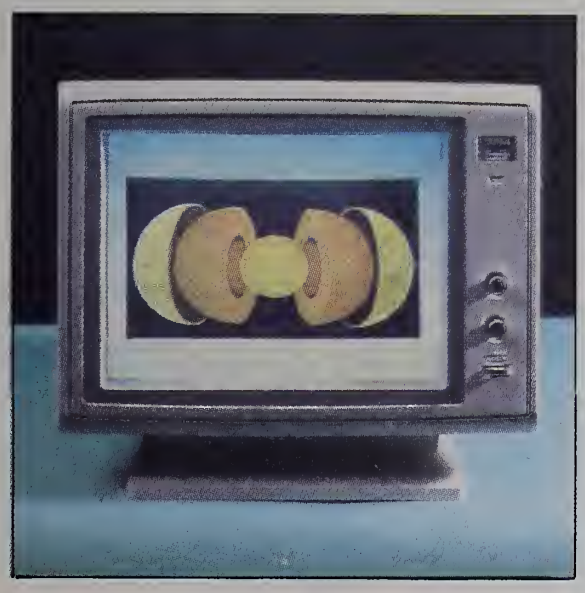

Quimax PX-22

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PX-22 Monitor Specifications

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Dot Pitch	• .31mm
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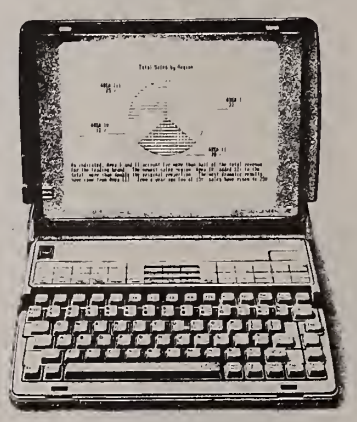

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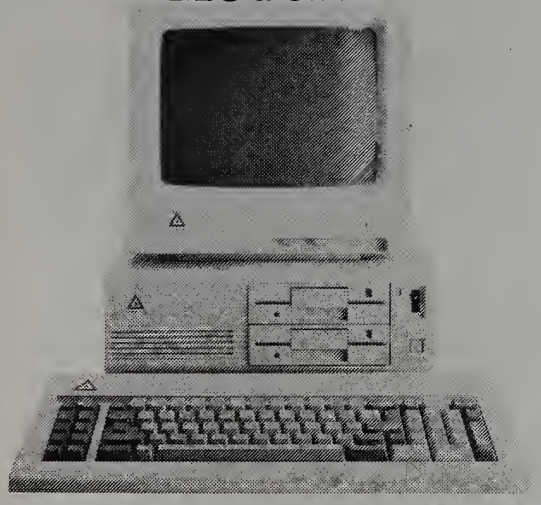

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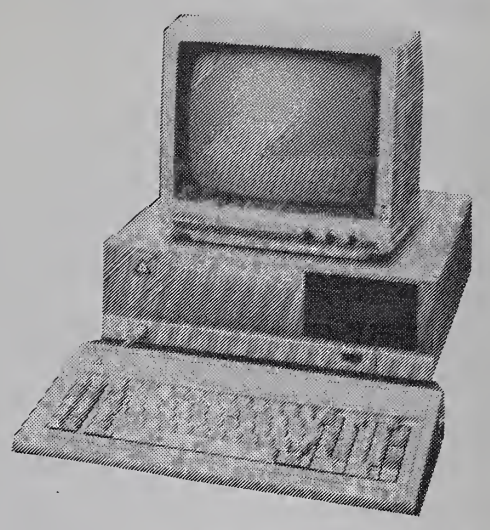

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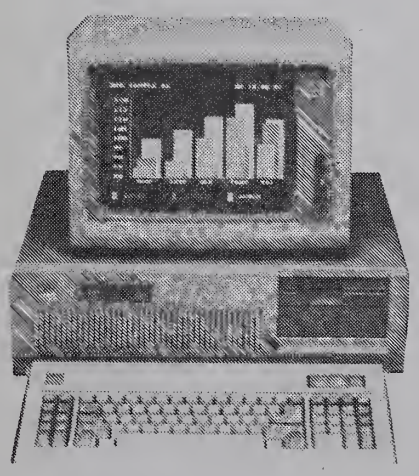

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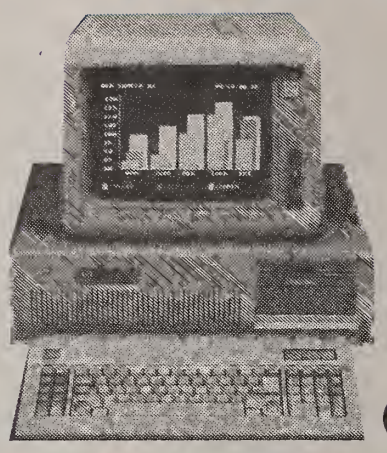

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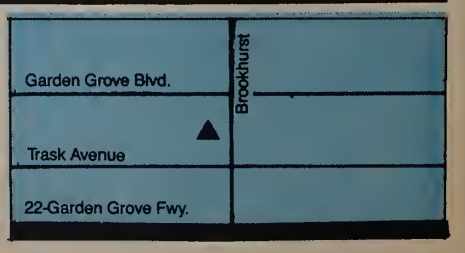


BUSINESS SOFTWARE

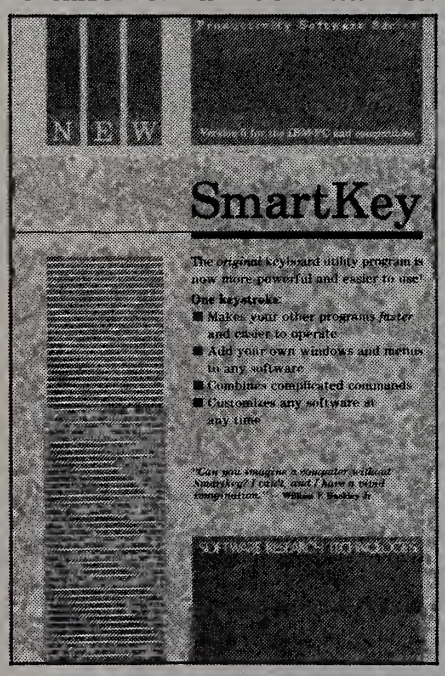
UTILITIES

the keys on your IBM PC keyboard. When you redefine the keys, you can make one key stand for a word or a sentence or a paragraph you might otherwise have to type repeatedly.

SmartKey is no exception to this: using *SmartKey* you can condense frequently-typed phrases or repeatedly-used commands to a single keystroke. Of course, you can also redefine the meanings of shifted keys and sequences introduced by control or "alt." *SmartKey* adds to this a "super shift" capability which not only gives you more keys to define, but also gives you an easy way to get to the literal meaning of any keystroke sequence you might have re-assigned.

SmartKey also provides a set of internal commands which can be embedded in keyboard macros. These "Smart Commands" perform functions like pausing for input, display of date and time information, nesting of keyboard macros, and macro definition "on the fly."

In addition to the ability to create keyboard macros, *SmartKey* will do several other things for you. It will enable you to create windows and menus. It includes a utility to redefine the layout of the PC keyboard to your specifications as well as a program to create a Dvorak keyboard layout. Using its own "batch" facility, *SmartKey* commands can be embedded in DOS batch files. A file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■ Add your own windows and menus to any software
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■ Customizes any software at any time

SmartKey 5.0 allows the PC and compatible user to use the computer more efficiently by condensing frequently-used operations into single keystrokes.

encryption program is included. A program to translate macro definitions from a competing product into the ones recognized by *SmartKey* is also provided.

SmartKey is not difficult to use, though clearly it is complicated enough that mastering all its features would take some time. A first time user should be able to redefine keys almost immediately. Working with the windowing and menu creation features of *SmartKey* will certainly take longer, but you should get enough benefit from the keyboard macros you build that you won't mind waiting awhile to become adept at the more demanding features.

SmartKey provides a menu interface for creating definitions, which is very handy for creating new key assignments during a work session. Particularly impressive is the "keyboard buffer" which contains the last sixty-four keystrokes you typed. This buffer can be read into a key definition at any time, edited, and saved.

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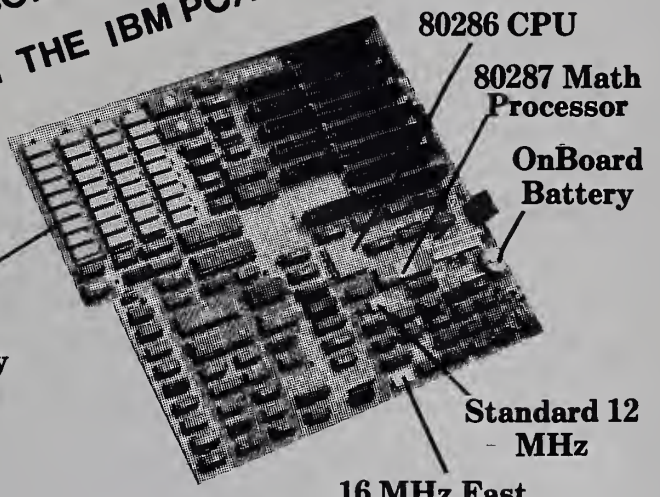

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BUSINESS SOFTWARE

UTILITIES

If you would prefer to define keyboard assignments outside the menu interface, any ASCII file editor can be used to create a definition file *SmartKey* can use. The definition file format is fairly straightforward and not particularly difficult to read. It would, however, be difficult to type, and one of the first definition files any user should put together is one containing keyboard macros to help write definition files. It is surprising that one was not included. (*SmartKey* does include sample definition files for some widely distributed pieces of software. These are offered primarily as examples, though they might be of some practical use.)

The *SmartKey* documentation is adequate, but too wordy. It is fine if you will be reading it straight through, but less helpful than it ought to be if you need to isolate a topic quickly; fortunately, it is indexed. The display of the menus you will encounter when using *SmartKey* is good. Less helpful are the representations of things you will need to type in literally and the arrow diagrams showing the progression of menu selections necessary for a particular topic. A *SmartKey* online tutorial is included, but requires that you configure an unusually large area of memory to hold your keyboard definitions and the tutorial simultaneously.

SmartKey is an excellent product. It is economical both in price and in its use of your computer's resources. It also works well and is potentially adaptable to a number of applications beyond the production of keyboard macros. While you're thinking up more arcane things to do with it (like password protection for your PC, for example), you'll find that your daily applications will be less of a strain and much less time-consuming.

WORD PROCESSORS

DisplayWrite 3

Published by: *IBM*
For: *IBM (required 256K for DOS 2.1, 320K for DOS 3.0)*
Price: *$349*
Reviewed by: *Marshall Smith*

IBM has finally shipped its new *DisplayWrite 3* word-processing program. *DW3* is designed to be the successor to *DW2*, the word-processing program based on the software for the DisplayWriter dedicated word-processor. To show how seriously the corporate world is taking *DW3*, Ashton-Tate recently spent sixteen million dollars to purchase *MultiMate* (the word-processing program based on Wang's dedicated word-processor) strictly to be able to go head-to-head with *DisplayWrite 3*. *DisplayWrite 3* is supposed to be all the word-processor you'll ever need, whether it's micro, mini, or mainframe that you're using. And what will the corporate buyers get for their long wait and high initial expense? The answer is simple—a big mess!

Now I realize that about this point you're saying "oh boy, here's another anti-establishment computer writer who lives for the day he can stick the old rusty knife in the IBM back." Far from it. IBM is the system that sits in my workroom at home, and IBM is the system that I've used working in a number of different word-processing jobs in San Francisco's financial district. So if the hardware I work on is all IBM, what word-processing software do I use? The answer is—*WordStar*.

This revelation will probably start you screaming

WORD PROCESSORS

"Hey, what gives? This guy puts down the latest and greatest in state-of-the-art software to defend the kludgiest old-fashioned software program that ever drove a word-processor bananas? Who's kidding whom?"

My answer is simple—let's just sit down and perform a simple function—temporarily resetting the right margin. This is something that every word processor has to do many times daily. With *WordStar* you would simply type CTRL OR and the column number you want, say 65, and then hit RETURN. To resume the former setting, just type CTRL OR, then the previous setting and press RETURN. Easy.

Now, let's try the same procedure in *DisplayWrite 3*. I'll break it down into a number of steps for all readers who haven't had a chance to have memory-expansion boards surgically inserted into their brains.

1. Move cursor to left-hand margin stop.
2. Press Function Key 7.
3. You'll see a separate screen titled FORMAT CHANGE.
4. Choose B (Change Margins and Tabs) . . . press RETURN.
5. Hold down right cursor arrow until you space across to the right-hand margin indicator (or you could repeatedly press the left arrow key the 69 or 70 times necessary to reach the right margin, but a lunch break might be necessary in the middle of this operation).
6. Press down the space bar the number of spaces you want to increase the right margin by . . . when you reach this point, press RETURN.
7. You will return to the FORMAT CHANGE menu, now press RETURN one more time to return to your document.
8. Want to change the margin back to your original choice? Just go back through these steps one by one, and if there's any time left in your day, you might even be able to get a memo or letter out before closing time.

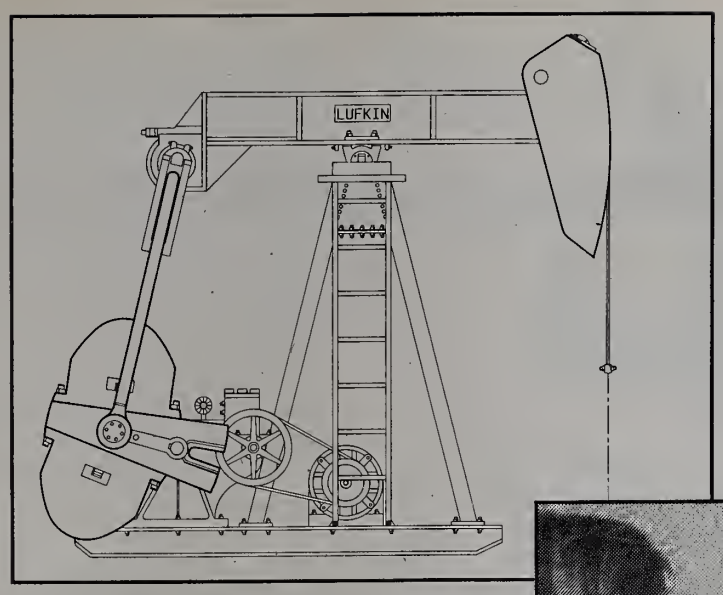
If this seems like a rather complicated procedure just to change the right margin, wait till you see the 20-step process necessary to set up columns. Or the steps necessary to paginate a long document. Or the . . . well, anyhow, you get the idea.

Is *DW3* the easy-to-use, all-powerful simplified word-processor for all seasons that the folks at IBM have been telling us to wait for? If you believe that one, then how about buying my IBM wave-of-the-future PCjr?

There are a couple of features in *DW3* that I like. Not enough to recommend to anyone that they buy the program, but it's true that the spelling checker works pretty well, although it's another complicated feature to use. Plus, with *DW3* you get on-screen underlining and boldfacing (I'm the first to admit that the ridiculous print control commands in *WordStar* should join the Nehru jacket and the Nash Metropolitan in well-deserved limbo).

The main difference between *DW2* and *DW3* seems to be that where in *DW2* the F1 key was blank, in *DW3* hundreds of impossible-to-understand help menus reside therein. After several ventures into this land of incomprehensible computer jargon, I've learned to avoid this key like the plague.

So all in all, if your choice of word-processors is to be between *DisplayWrite 2* or *3*, then by all means immediately dispose of your computer and get a manual typewriter. Or a pencil. Or even stone tablets and a good chisel.



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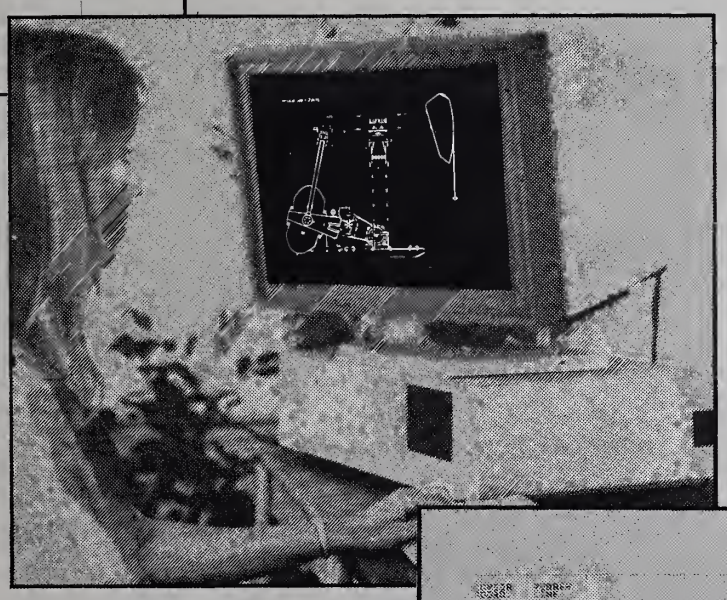

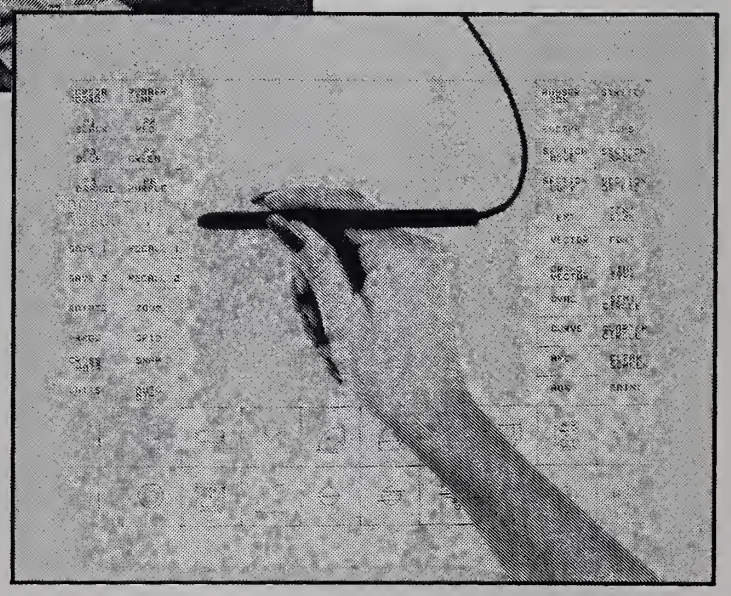

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APPLE II LIVES!

Is the stalwart Apple II coming to the end of the line?

Or is it just getting started?

It depends on who you're talking to.

By Mary Eisenhart

"There are very few computer stories to compare with the legendary rise of Apple, and indeed very few comparable stories in any kind of business. As you read this, certainly more than two million Apple IIs of some sort are floating around in the homes and offices of America. Even if you know little about computers and aren't really sure you like them, nothing short of continuous residence in a bomb shelter since 1979 could have prevented you from hearing about Apple."

— Ed Kahn and Charles Seiter,
The Skeptical Consumer's Guide To Used Computers

Since its arrival on the scene in the late '70s, the Apple II computer in its various incarnations has enjoyed phenomenal sales and popular acceptance. From the beginning, computer and company have been more than a machine and its manufacturer — they've become, with the passage of time, a cultural icon, an American myth. "No matter how big we get, we're the upstart company," says Don Field of Apple's consumer marketing group on the public's perception of the Cupertino company. "We're always the little guy, fighting IBM and everybody else for a chunk of people's mindshare in personal computers. I think that image has stuck to the company through thick and thin."

Throughout its meteoric rise from garage enterprise to global empire, Apple has generally managed to retain that image — a people's computer company with a vision. In the process, they've produced high-quality products and maintained unusually supportive relations with developers, dealers and users.

For the last year or so, though, the fate of the Apple II has often seemed uncertain. The biggest threat, strangely enough, seemed to come not from without but from its little brother Macintosh, which Apple aggressively promoted as friendlier, smarter and faster — the wave, in fact, of the future. As the company seemed to be concentrating all its resources on the Macintosh, speculation was rampant that the II was on its way out. Internal turbulence at Apple, most notably the angry departure of co-founder Steve Wozniak, the machine's creator, lent credence to the notion.

Oddly enough, the II continued to prosper. Consumers continued to buy the IIe and IIc (its compact, closed-box companion) by the thousands every month. Software and add-on products for the machine continued to sell briskly, and first-time buyers, heartened by the abundance of options available for the II, bought more and more units of the machine.

Finally, in September of this year, Apple itself announced a host of add-on products and accessories for the Apple II line, affirming the company's ongoing commitment to the machine that had kept it going during the early days of Macintosh. Some products, notably new color monitors and an enhanced ImageWriter printer with color capability, seemed directed chiefly at the home market.

On the other hand, Apple also introduced two sophisticated storage and memory peripherals, the UniDisk 3.5, a 3½" floppy disk drive with a storage capacity of 800K, and the Apple II Memory Expansion Card, which can expand the IIe's internal memory to over one megabyte. These enhancements were evidently deemed necessary to keep the II viable in a world of expanding memory and colossal storage capabilities; they also increased the usefulness of *AppleWorks*. Released in 1983, this Apple-developed integrated software package (word processing, database, spreadsheet) made the II a highly functional, easy-to-use machine for business applications. *AppleWorks* was soon perceived as somewhat hampered by the II's standard 64K of RAM, which at the time was expandable to a maximum of 128K. This began to seem somewhat feeble as 256-, 512-, and eventually 640K RAMs became increasingly common. Now, with the introduction of these new enhancements, the II and *AppleWorks* will be in a more competitive position in the business marketplace.

All in all, reports of the II's demise seem highly exaggerated, but opinions vary about its long-term viability. Nobody seems to seriously question that it's an admirably functional computer which efficiently performs most tasks anyone would want to use a computer for. Apple itself maintains that it intends to keep II-related development in process, improving the machine and making more options available.

However, there are always threats on the horizon. Many speculate that the new Commodore Amiga and Atari 520ST, versatile, friendly machines in the same price range as the II, with far more spectacular graphics and sound capabilities, will make inroads into the II's market, particularly in the home — if not this year, then next, as more software and accessories become available for the new machines. Others worry that the II's 6502 8-bit microprocessor is going the way of the dinosaur as faster 16-bit machines become the industry standard. And finally, others voice the opinion that what is, rightly or wrongly, perceived as Apple's 18-month neglect of the II in favor of the Macintosh, to say nothing of its numerous and much-trumpeted corporate upheavals, have dealt the machine setbacks from which it may not recover.

What follows is a series of profiles — people and companies whose work, in one way or another, revolves around the Apple II. Their products are as varied as their opinions. Some seem to believe that the II is doomed, though they view the prospect with regret. Others seem committed to keeping the machine alive well into the next century.

Usefulness, versatility and ease of use have been the historic strengths of the II. As long as consumers require those qualities from their computers, the Apple II will probably still be with us.

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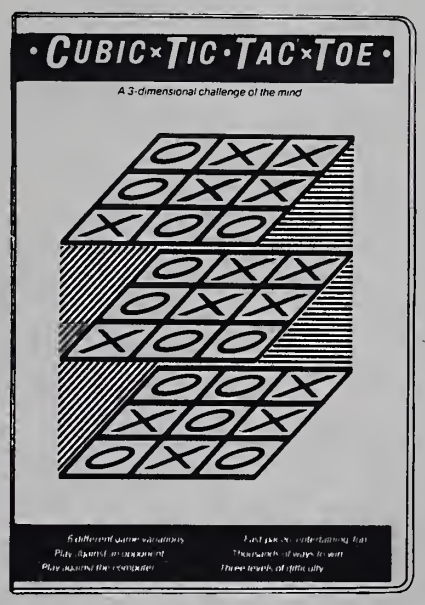

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Apple:

The State Of The II In The Post-Macintosh World

One of the factors that distinguishes Apple Computer from most computer companies is its carefully cultivated, supportive relationship with the users of its products. While it's had its fair share of debacles (witness the ill-fated Apple III and Lisa models), the company has an excellent record for ongoing support. Obsolescence, planned or otherwise, is not part of its marketing strategy, and there's substantial reason to believe that an Apple IIe or IIc purchased today will be well supported for the predictable future. After all, they're still supporting Apple II and II+ machines, which haven't been made for years.

"In my opinion," says Don Field of Apple's consumer marketing group, "Apple owners *expect* Apple to continue to support the products that they've bought into. Most of the products that we introduced in September work not only on the current Apple IIs but on the older Apple IIs. The 3½" disk drive, for example, works on the Apple II and the Apple II+, neither of which we make anymore, as well as the IIe and the IIc that we make now. The memory expansion card also reaches back all the way to the Apple II and II+.

"We feel a commitment to the Apple owner to bring those out — and it's good business too. We're really bringing the Apple II system up to date, keeping it with the latest technology, responding to what people need in the Apple II, and continuing very strong development on that product."

Rightly or wrongly, many observers and Apple II users were seriously alarmed by Apple's development and promotional blitz for the Macintosh during most of 1984 and 1985 — the campaign was often perceived as a tacit admission that the company had all but written off the II. Field concedes that a good many people got that impression, but emphasizes that it was erroneous.

"I think what was happening was the need to establish a new brand name, as opposed to just another product line from Apple. To do that requires a lot of resources; anybody would think, if you're putting more of your resources there to establish the new brand name, that you might be taking resources away from the products that are already out there. Well, an established product just doesn't need a lot of that, especially when you're getting a new one going. What you'll see, now that both lines are established, is a much more even-handed approach to these products. Both are ongoing product lines that need significant support."

One of the II's great strengths has been its versatility. Thousands of programs and accessories have made the II capable of handling a mind-boggling range of applications — Apple II owners use their machines to run businesses, teach their children, zap aliens and slay dragons, and balance their budgets. An Apple II, customized with all manner of gadgets, was used to drive William Schroeder's Jarvik heart, says Field.

But as the II's competitors proliferate and diversify, what considerations might induce the prospective buyer to get a II, rather than some other machine? And what would cause a II owner to hold onto the machine, rather than move on to something else?

Field repeats the fairly standard advice to would-be buyers: know what you want to use the machine for before you buy it, and then buy the one that serves that purpose best. The problem with that advice, though, is that most would-be computer owners don't know what they're going to want to use the machine for; they may have one purpose in mind, and also a lurking suspicion that they're going to discover all kinds of new uses for it later. Or they may have just decided to get a computer from some vague motivation that the time has come to buy one.

"What *we* would say," Field says, "is, if you're not sure what to do with it, pick an Apple, because there's so many things that you *could* do with it. There's hardware and software that will let you handle what you want to do."

A case in point is *AppleWorks*, an integrated software package which allows the user to perform word processing, database and spreadsheet functions on the Apple II. Not only is *AppleWorks* arguably the friendliest package in its category for *any* machine (a fact which has not escaped the notice of those who keep it a permanent bestseller), it symbolizes Apple's determination to keep the II competitive in the evolving marketplace — and to overcome the machine's perceived limitations.

"We saw that there was an opportunity for integrated software on the Apple II," recalls Field, who was involved in the project. "Interestingly, just about the time that *AppleWorks* came out, there were still articles in the computer press claiming that the reason there wasn't any integrated software on the Apple II was because the ancient architecture of the Apple II didn't permit that kind of thing. It just wasn't possible.

"Those of us who were working on *AppleWorks* at the time," he grins, "were going around snickering, 'Wait till you see what *we've* got...'

"It was one of a series of products that brought the perception that the Apple II is alive and well, thank you, and can handle any of the requirements that are placed on any other computer — integrated software, a high capacity floppy disk, or a megabyte of memory — that the Apple II could handle that just fine."

During 1984 and 1985, after the release of *AppleWorks*, there was little in the way of Apple II- and *AppleWorks*-related development going on at Apple due to the Macintosh campaign. While the company's attention was occupied elsewhere, a host of third-party hardware developers scrambled to produce add-on devices to take full advantage of the software's possibilities. Applied Engineering, for instance, came out with a series of memory-enhancement cards for the IIe and IIc (to protests that the IIc was a closed-box machine, not to be tampered with, AE president Dan Pote chortled, "Not if you have a screwdriver..."); they came packaged with add-on software to increase the speed and efficiency of *AppleWorks*. And Space Coast Systems developed 10- and 20-megabyte *internal* hard disk drives for the IIe, so that the user could not only keep *lots* of *AppleWorks* files, but cart them around easily. And in the garages of America, any number of products were being created to fill the void temporarily left by Apple.

Rather surprisingly, Apple turned a benign eye on these proceedings, even when the company announced its own memory enhancements and storage products this year. "I think those kinds of things are wonderful," says Field. "That's not to say," he adds, mindful, no doubt, of Pote's screwdriver remark, "whether anything in particular might void a warranty..." He cites precedents where the company has waived the Macintosh's don't-open-this-machine-up-or-else warranty requirement in favor of this or that third-party product, and maintains that the company is always ready to work with third-party developers on a cooperative basis.

"It's just fantastic," he says, "the amount of add-on hardware that's been created for both the Macintosh and the Apple II line. Even those that in a way compete with Apple, from our perspective it's great that they're out there, because they just expand the number of options that are available.

"Our objective in coming out with our own card is to establish a standard, to say that there is a card from Apple, because there are people who are always looking for that. When something comes from a third party, it's not as easy for a developer to say, 'I will have my product support that device.' But if it's from Apple, they can feel very comfortable. So we need to do those kinds of things to promote the Apple II, in this case, to as high a level as it can go.

"But that's in no way to say that any other solution isn't a good solution. If that's the right solution for someone, fine. They help sell Apples, no question about it."

The bottom line, he says, is that if the II meets the needs of users, it will prosper. And, he says, "if you own an Apple II, the fact that there's not just a group of companies, but an entire industry built around making the Apple II a more valuable system, and a more productive system, is of great comfort." (Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, (408) 996-1010. Applied Engineering, P.O. Box 798, Carrollton, TX 75006. Space Coast Systems, 301 S. Washington Ave., P.O. Drawer 2767, Titusville, FL 32781-2767.)

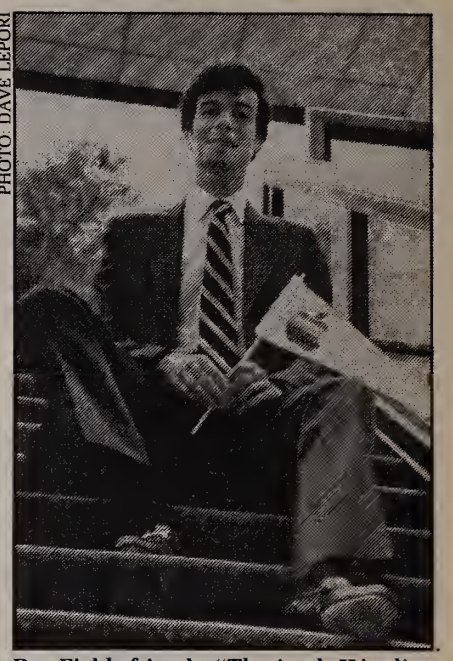

PHOTO: DAVE LEPORI

Don Field of Apple: "The Apple II is alive and well, thank you."

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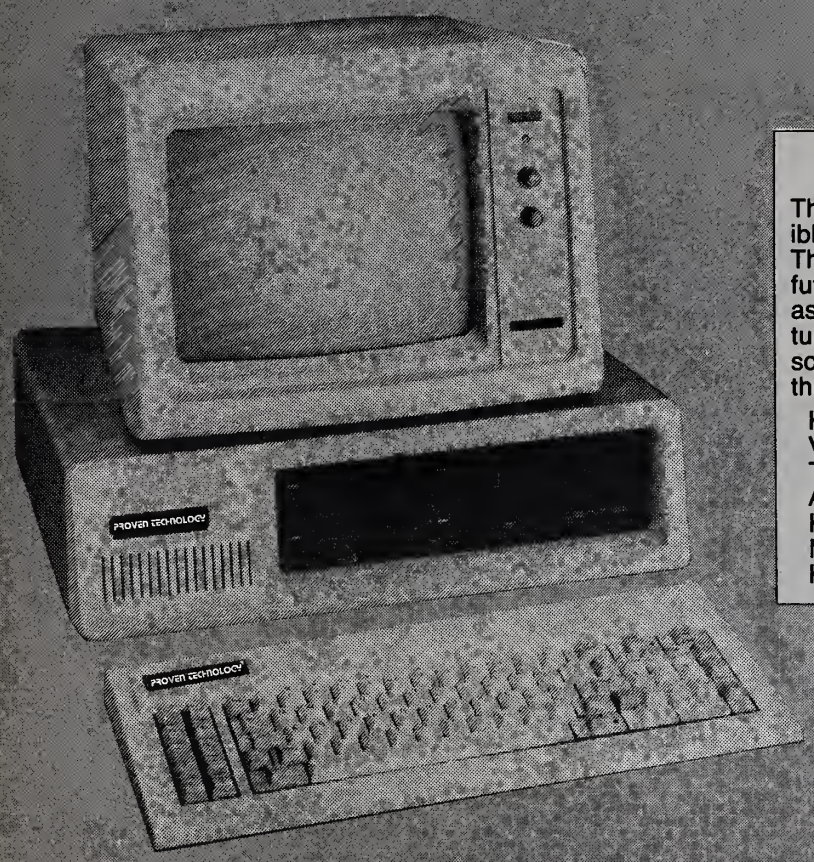

WHY THE PROVEN XT

HARDWARE

The PROVEN XT is bus-compatible with the IBM PC standard. This means that existing and future hardware add-ons such as modems, memory boards, turbo boards (with fast processors), etc, will all work. Some of the tested hardware:

- Hayes 1200 B Internal Modem
- Volksmodem 1200
- Tecmar Multifunction Board
- Alloy Slave Board
- Hayes Joy Sticks (w/ adaptor)
- Microsoft & Visi-On Mouse
- Hercules Graphics Board

SOFTWARE

The PROVEN XT can run all of the popular programs written for the IBM PC. The power and versatility of this software base is enormous, and unsurpassed. Some of the tested programs are:

Lotus 1-2-3	Flight Simulator
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Wordstar	Copy 2 PC
L Edge WP	PC-DOS 2.1
Nutshell	MS-DOS 2.11
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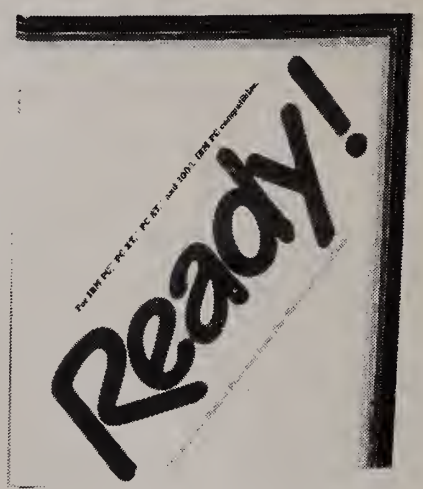

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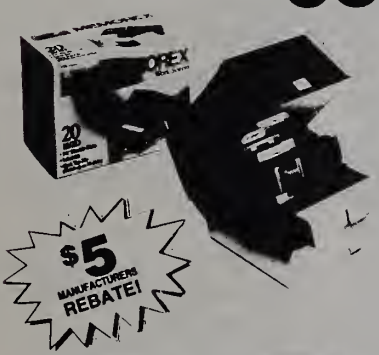

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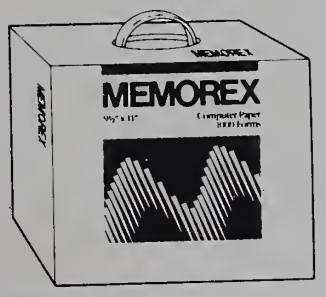

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Business:

Apple II In A Big Blue World

Charles Rubin with the *AppleWorks*-generated report that handily beat out *Symphony* and the IBM.

"I've never lost a file with an Apple II, never had the hard disk crash, never had a software problem. Can you look at a PC and say that?"

This September in San Jose, a benchmark test was held pitting a 640K IBM PC running Lotus' *Symphony* against a 128K Apple II, souped up with an Applied Engineering RAMworks card for a total of 640K, running *AppleWorks*. The objective of the half-hour contest was to determine which hardware and software performed most productively under normal office conditions, realistically simulated down to the fact that each machine's operator was interrupted three times within the 30 minutes by telephone calls.

On the IBM was Andrew Williams, author of *What If?* and *Lotus 1-2-3 From A To Z*, who had worked extensively with *Symphony* for over a year. On the Apple was Charles Rubin, author of the books *AppleWorks* and *The Endless Apple*. Both had organized their data according to products, sales, vendors, salespeople and customers; both were given the task of generating a sales report showing sales for the month by product, sales for the month listed by salespeople, sales listed by customer, new customers gained during the month, customers ranked by date of last sales call, and the projected effect of increasing salespeople's commissions from 5% to 7.5% to 10% each time a volume threshold was crossed. Each report was also to contain text explaining the various tables and spreadsheet reports generated.

As it turned out, it was no contest. Rubin and the Apple finished their appointed task well ahead of Williams and slightly under the 30-minute deadline. Williams and the IBM were so far behind that finishing at all was questionable.

Both results, says Rubin, commenting on the event a few weeks later, are logical consequences of the respective machines' natures and the software they run — for all its power and versatility, the IBM package is complex, hard to use and full of pitfalls, whereas *AppleWorks*, designed for simplicity and function, is also highly disaster-proof.

"The larger and more complicated you make a program," says Rubin, "you're trading simplicity and you're trading reliability. When you have a simple product like *AppleWorks*, you can do your work without having to worry about getting into trouble. *AppleWorks* has 30 commands, *Symphony* has 600. So the opportunities for putting those commands together in an improper way, and getting into situations in which you're going to destroy data, or destroy a macro, or destroy a link between one part of a spreadsheet or another, are so varied and so vast that you spend all your time worrying about how you're going to stay out of trouble, and you can't spend any of your time getting your work done.

"And that's *exactly* what happened to Andy Williams, who knew what he was doing and has used *Symphony* for over a year. He said it would've taken him a couple more hours to finish that report, because he had destroyed a data link between the database part of the spreadsheet and the text part where he was assembling the report. In moving around quickly, and getting interrupted like people do in the office every day, one of those situations in which he could do something destructive didn't quite occur to him soon enough, and he did something that wrecked the data link. With *AppleWorks*, if you make that kind of mistake, the worst thing that's going to happen is that it's going to beep at you."

This disaster-proof design, says Rubin, makes the Apple II an ideal machine for the fearful computerphobe in the office, because it effectively eliminates most of the complications that strike terror into the hearts of neophytes and keep them from getting any work done on their machines. Any number of small touches in the II's design and that of its software serve to simplify tasks and make the user more productive — right down to the fact that the Apple's DOS (disk operating system) is on the same disk as the programs, in sharp contrast to the IBM world in which the user has to first load the operating system diskette, then boot up whatever application he has in mind.

Also, says Rubin, Apple documentation is clearly written and doesn't keep the user chained to a manual looking up the meanings of unfamiliar prompts and commands. And, perhaps most importantly, "Apple programs tend to be harder to screw up with. They warn you at least two and usually three times before you do something destructive like delete a file or format a disk. With an IBM PC you can type a three-character command and press Return and format a 20-megabyte hard disk. That places a much heavier burden on the user of that machine to know exactly what they're doing.

"*Nobody* who's beginning to use a computer knows exactly what they're doing. It's less intimidating to feel that it's ok if you make a mistake, nothing bad is going to happen. It's a much more pleasant experience if the errors are not catastrophic."

However, in spite of the Apple's many sterling qualities, a quick look around the American office environment shows IBM as the clearly dominant machine. The question naturally arises as to why the Apple has failed to take hold in that particular segment of the market.

Rubin concedes that the II has one probably-insoluble drawback as a business machine — it's incapable of generating the high-resolution graphics the IBM can achieve, so spreadsheets, for instance, don't look so spectacular. He contends, though, that the II's long-time limitations of inadequate memory and data storage have been overcome, between Apple's recent product releases and the efforts of third-party developers.

He also contests the oft-repeated objection that the II's 8-bit 6502 microprocessor is too slow by today's standards, and that its technology is dated. "So what?" he says. "The only thing that matters is whether the machine does what you want it to do. If it does, it doesn't matter whether it's ten years old or ten days old. The IBM PC's a dated machine, five years old. It works, doesn't it?"

It's Rubin's contention that the uncertainties of the Apple's future in an increasingly IBM-oriented world are due less to the machine's inherent limitations that to what he considers seriously ill-advised decisions.

"Today the Apple II should be a much stronger product. If Apple had put the resources that they wasted on the Apple III into the Apple II, and even a tenth of the resources they put into the Macintosh into the Apple II, and if they had had a coherent plan for how these products were going to coexist, the Apple II would own the market now.

"If they had really gotten off the dime with 16-bit processors, they could've had one over a year ago on the Apple II. And at that point there would still have been a lot of interest in the development community in doing software for that new processor. Now I'm not so sure there is a lot of interest, because the market has more or less ceded its serious applications to the IBM PC. There's been this line drawn: If it's serious, it's IBM, and if it's not-so-serious, or if it's educational, or it's real lightweight personal, then it's Apple. And that line never really had to be drawn. They forced it to be drawn because Steve Jobs couldn't bear the thought of the Apple II even remotely competing with Macintosh.

"The edict came down," Rubin continues, "that nobody in the Apple II division was to convey that the Apple II was even remotely a business machine, or they would get their throats cut. And how do the developers feel about that? How do the people that have high-end database programs for the II feel about that? What are they supposed to think when Apple starts pulling that stuff? And so now you've got companies like Microsoft totally withdrawing from the Apple II market."

As for Apple's recent announcements of products to re-establish the II as a viable business machine, Rubin feels that it's a classic case of too little, too late. "I think the denigration of the Apple II as a toy has gone on too long. A lot of developers are just walking away from it."

All in all, he says, the Apple II has probably had its day, though he doesn't welcome the thought. "The Apple II is going to go away," he says. "It's really too bad. I think I'll continue to use an Apple II for as long as it doesn't interfere with the way I do my job. It'll get worse, and when it does, I suppose I'll switch.

"But I'm going to feel bad about it. I have this visceral feeling about my Apple II. It's never let me down. And it has fulfilled the promise of personal computing for me as advertised. I've never lost a file with an Apple II, never had the hard disk crash, never had a software problem. Can you look at a PC and say that?"

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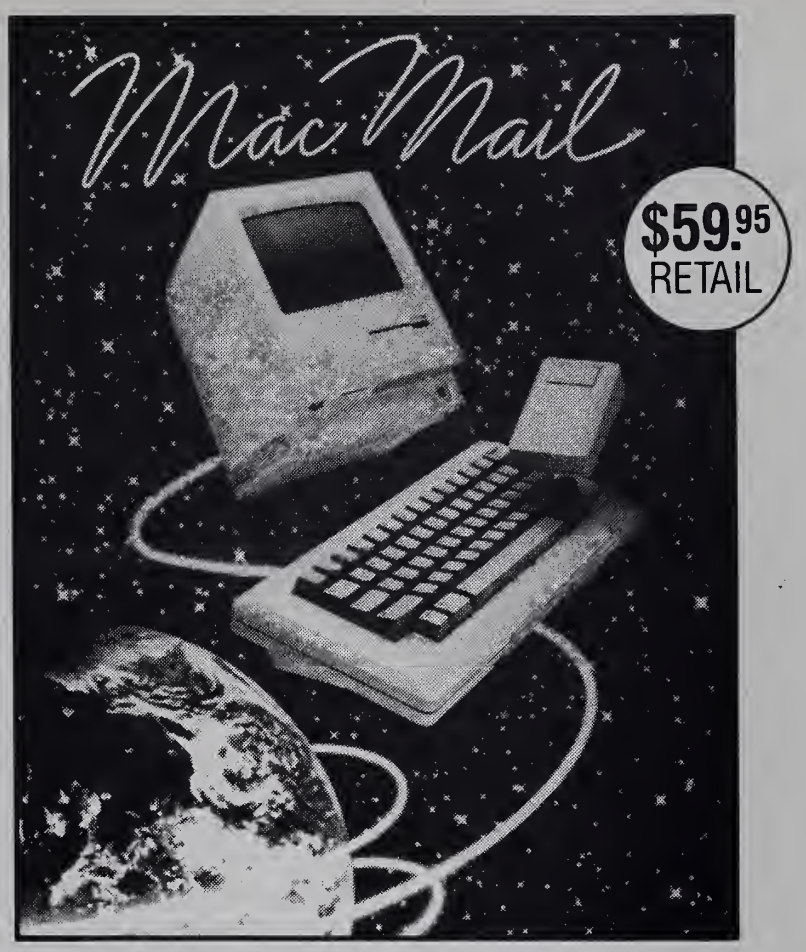

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"Wouldn't it be neat," speculates Bill Cleary, International Solutions' marketing vice president, "if we could really live out the Marshall McLuhan global village, forget about boundaries and borders, be able to expedite and bring technology from one nation to another, very quickly?

"One of the brilliant things that Steve Jobs did was see the need for the democratization of computing power, that the individual needed a computer, that it was the first extension of the human brain. We thought, we're going to bring about the democratization of computing power in America, but what about the rest of the world?"

Such was the motivation that led to the creation of International Solutions, a Sunnyvale company with numerous Apple alumni among its founders and management. International Solutions has three complementary functions—to find and publish software from overseas markets that fills a market need in the US; to perform the reverse operation, publishing American software where there's a need for it in foreign markets; and finally, to become a marketing liaison for US developers.

Mark Kvamme, the company's vice-president, co-founded International Solutions while still working for Apple, entirely with his employer's blessing. Kvamme, whose fluent French and Norwegian were to serve him well in dealing with foreign developers, eventually became international product manager for the Apple IIc and formed close ties in the European market. He left Apple in 1984 to concentrate on International Solutions full time, having discovered some interesting niches in the software world.

International Solutions is unequivocally optimistic about the future of the Apple II. "People seem to forget," says Kvamme, "that there are over two million Apple IIs out there, and they're still buying them at the rate of 30-, 40-, 50,000 a month. *That*," he adds, "is a marketplace."

His European contacts gave Kvamme a relatively unique perspective on the II. "Basically people in the US stopped developing for the Apple II when *AppleWorks* came out. Well, France just kept right on going bang-bang-bang-bang. I go to France, and see all these great products, and figure I can bring them over here and *totally* surpass everybody." Consequently, he set about trying to achieve just that.

International Solutions recently unveiled the first results of its French connection, in this case with a company called VersionSoft: the Mouse Series, which virtually duplicates the Macintosh working environment on IIes and IIcs with a minimum of 128K. Each program has been designed to be fully compatible with Apple's recently announced products (Kvamme and Cleary note that the effect of the software running in crystalline black-and-white on one of the new color monitors is quite startling — at recent product demonstrations at trade shows, unsuspecting passers-by would do classic double-takes and puzzle "*That's* not a Macintosh . . .").

Much like the Macintosh programs that inspired it, the Mouse Series emphasizes functionality, visual appeal and ease of use. *MouseWord* is a close relative of *MacWrite*; it features pull-down menus, and allows the user to perform cut, paste, copy and layout functions with the click of a mouse. *MouseWord* also includes a full-featured telecommunications program, so the user can access on-line networks and send documents over phone lines.

Two financial packages are similarly functional and easy to use. *MouseBudget* is a home financial product which handles up to 60 separate accounts, keeping track of bank accounts, credit cards, income and expenses, and also making life a lot easier at tax time by maintaining easily accessible records. The more sophisticated *MouseCalc* is a fully featured integrated spreadsheet/graphics program, with crisp color display, intuitive pull-down menus, a 254-row by 63-column spreadsheet, and 24 commonly-used math and logic functions.

The *piece de resistance* is the newly-announced *MouseDesk*, which is, as Kvamme puts it, "the Macintosh Finder on the Apple II," duplicating the Mac's desktop environment, displaying available applications, options and files by icon (or by name, if desired), and making them accessible at the click of the mouse.

According to both Cleary and Kvamme, Apple as a company is exceptionally supportive of third-party software developers — as evidenced by the fact that there are currently over 10,000 programs available for the Apple II, with that figure growing daily. "We're getting access to Apple," says Cleary, "because they know that the creative guys, the third-party guys on the outside, are going to help drive the sales of their computers. They've come to the realization that they can't do it alone, that they need the support of the third party community. A lot of the stuff that we do is incredibly inventive, entrepreneurial and high-risk — not the stuff that would emanate from a large corporation."

PHOTO: DAVE LEPORI

Bill Cleary (l) and Mark Kvamme of International Solutions, with *Mouse Desk*, which duplicates the Macintosh desktop environment on the Apple II.

"People seem to forget that there are over two million Apple IIs out there, and they're still buying them at the rate of 30-, 40-, 50,000 a month. THAT is a marketplace."

International Solutions markets software for other machines than the Apple II. They are, for example, actively bringing IBM software to European markets. Nonetheless, they are very supportive of the II and tend to discount rumors that the onslaught of competition and sophisticated technology portend doom for the machine. Citing the ill-fated Coleco Adam and the unsuccessful IBM PCjr, Cleary doubts that the latest challenge from the Amiga or the Atari 520ST will hasten the Apple II's demise.

"Every year somebody goes head-to-head with the II," he observes, "and the II always wins. There's a reason for it. It's kind of like the Volkswagen bug. Yeah, it's only got four cylinders, but it's great transportation. You still see them on the roads — very functional, good transportation, cheap.

"That's what the Apple II's all about. The fact is that its open architecture is lending itself to RAM expansion capabilities, accelerator cards, hot software, mouse interface —the thing is still growing. It was the first industry standard, and as such it's accrued this incredible base of functionality."

Cleary does concede that there are always going to be users who prefer Maseratis to VWs, and that the Apple II is not going to be the machine of choice for these people. But he adds, "It's not my perception that Apple IIs are slow, or even limited, for that matter. What makes the Apple II great is its simplicity. Functionality should be the only question you should ask."

Functionality, he says, is the issue that should be addressed in presenting the Apple to potential buyers. "Consumers are not dumb," he insists. "They're not stupid. All these guys are out there saying 'Computers do X, Y and Z, and if you don't buy one your kid's going to be an idiot.' What we *should* be saying is, 'Here's what computers can do for you. If you need one, here are a few ideas of the types of products you need to look at.'"

Considered in the light of functionality and ease of use, he says, the Apple II and its ever-increasing software and add-on base are going to be a dynamic force for years to come. In fact, he says, the computer industry is just getting started. "If you look at television in the early '50s," he reasons, "not many people had bought them yet. You had all these shows, but they weren't very good. And then along came *Bonanza*, and Disney and the Mouseketeers and stuff, and all of a sudden penetration of the market started.

"We believe that software is going to drive the penetration of personal computers. To really drive the market across the board, we need greater functionality, that's the key. I think the inventiveness of the third-party community is going to carry it that next step. We look at our software as being *Bonanza*, it's at that stage. This is going to drive the sales of Apple II even farther, it's going to keep it alive that much longer." (International Solutions, 910 West Maude Ave., Sunnyvale, CA 94086, (408) 773-0443.)

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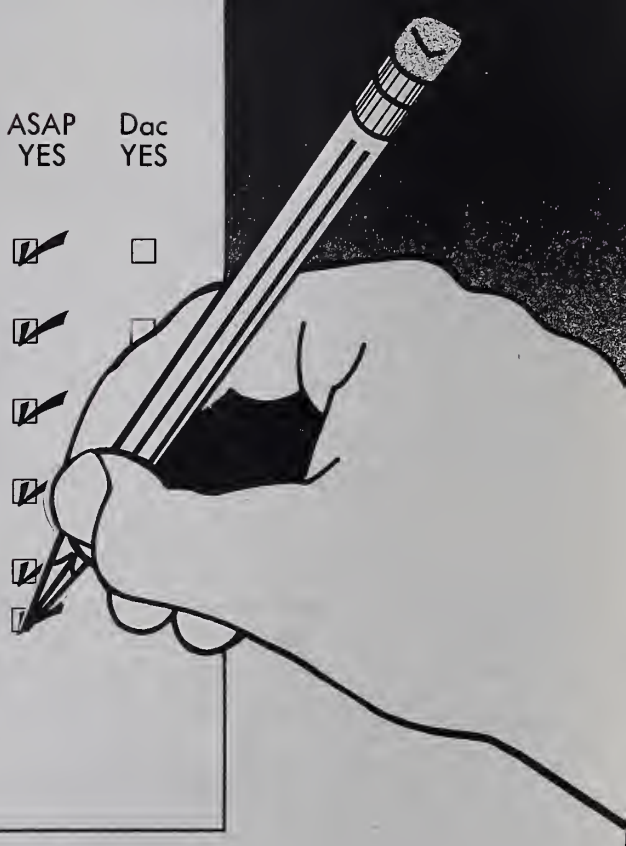

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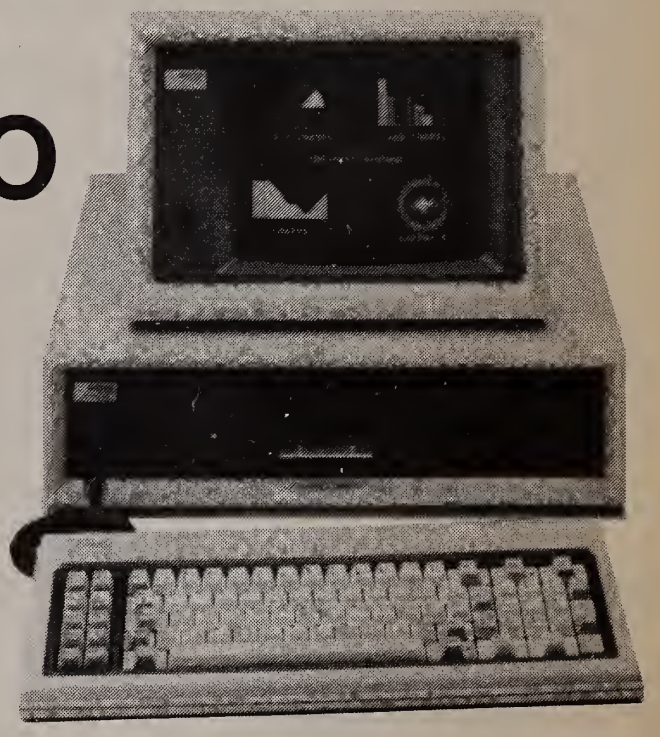

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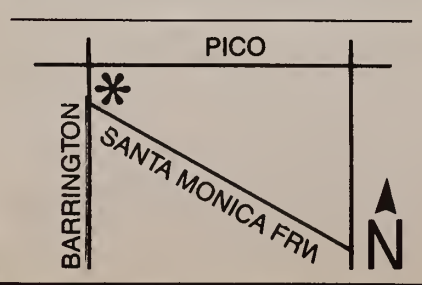

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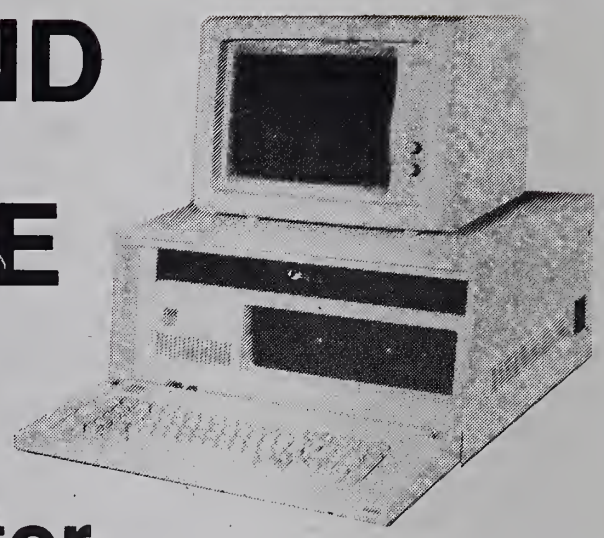

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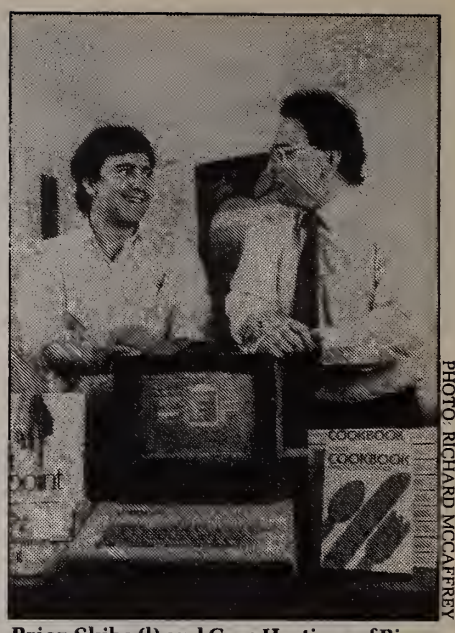

PHOTO: RICHARD MCCAFFREY

Brian Skiba (l) and Greg Hastings of Pinpoint; products to facilitate real work, from kitchen to desktop.

One fateful day a few years back, Brian Skiba, a veteran mainframe type, was sitting around the office of a large East Coast corporation waiting, as usual, for the machine to accomplish its appointed task. He happened to pick up a *Softalk* magazine. The effect was galvanizing.

He recalls, "I was going, 'What the hell's going on here? This is *fascinating!* Where the hell did all *this* come from? I've got to get one of those things!' — and I called that day and ordered an Apple II+."

Shortly thereafter, Skiba joined forces with a colleague from the mainframe world and formed a software development company called Virtual Combinatics. Giving it due consideration, the partners decided that the best course of action was to create a product that was both useful and easily distinguishable from the herd; their first offering was an Apple II+ program, *The Micro Cookbook*. "Rather than build a general database manager and get destroyed like 98% of the other companies, we focused specifically on that area," he recalls.

It turned out to be a good decision.

The Micro Cookbook, somewhat like its print media counterparts, allows the user to store recipes and provides conversion charts and the like; it will also give you an idea of what your options are if the contents of your refrigerator are hamburger, tomatoes, spinach and mushrooms, for instance. However, being the brainchild of ex-mainframers, it had sophisticated features that the average user would probably never have occasion to use but that the creators thought might be nice to have around — visual shells for the ProDOS operating system, desktop accessories including a hard disk manager, and other options that had little to do with cooking but would assume considerable importance at a later point in the company's evolution.

The *Cookbook* first appeared in September 1982. With the passage of time, it expanded into versions for the Apple IIe, IIc, the IBM and Commodore. It acquired a European version with metric measurements. It's sold over 100,000 copies to users who range from homemakers to television chefs to the Sisters of Mercy. In the process, it's gone through eight editions and acquired 14 add-on recipe diskettes, which also sell briskly. "The concept seems like one of the world's stupidest ideas," Skiba says, but it obviously works. And he's been unable to resist packing it with more little programming niceties with each successive revision. "It's overkill for a cookbook in some cases," he allows, "We could've gone out with a more trivial product. But it evolved — seven times I've rewritten the damn thing, and it gets better each time." It also stays reasonably priced; it's currently selling for $49.95.

The same obsession with quality programming and adding extra niceties to the product found another outlet in the next Virtual Combinatics product, *Ortho's Computerized Gardening*, developed in conjunction with the chemical company. Based on the *Cookbook*'s successful strategy of finding something people really needed to do and making it easier, *Computerized Gardening* put a wealth of gardening information at the user's disposal — not just general information, but data specific to the gardener's geographical area. Using this program, the user could enter his zip code into the computer, further inform it that he'd like a sun-loving plant that blooms in the fall, and the machine would present him with several suitable options.

This program, too, prospered, to the point where Skiba's partner was finding it all too time-consuming. At the same time, Greg Hastings, an advertising executive on the West Coast who had joined forces with Virtual Combinatics, was recommending relocating the company from Massachusetts to California, on the grounds of better contact not only with Ortho but also with Silicon Valley.

The upshot of all this was that Skiba and Hastings bought out Skiba's partner's share of the company and, in February, 1985, packed its tangible assets into ten cardboard boxes and moved to Oakland. "We shipped the entire company UPS," says Skiba.

The move allowed Virtual Combinatics to work more closely with Apple's software evangelists, who already regarded the company favorably because of an earlier experience with the *Cookbook*. When the IIc was first released in 1984, the *Cookbook* was one of the few programs that took advantage of the machine's hardware: "Our software made their little computer really come alive, and they never quite forgot that," says Hastings.

And when Apple started looking for enhancements for *AppleWorks*, its evangelists suggested that those desktop accessories in the *Cookbook* might be worth further development.

The result was a product called *Pinpoint*, which Hastings calls "the most expensive product we've ever sold" at $69. *Pinpoint* is a set of desktop accessories much like *Sidekick* in the IBM environment. It allows the Apple II user with a minimum of 128K to access nine different useful applications without leaving *AppleWorks*. It's compatible with most ProDOS software, takes full advantage of Apple's new memory enhancements, and includes functional tools to make work on the Apple easier: an appointment calendar, a calculator, a communication window for sending messages via modem, a cut-and-paste option, an envelope addresser, a program for merging graphics with text documents, a notepad, a telephone dialer, and a one-line typewriter.

Having created this program, Skiba and Hastings decided that the name "Virtual Combinatics" had outlived its usefulness. "It's very difficult for us to imagine having a runaway hit product with that company name," explains Hastings. "Pinpoint" seemed to have the right connotations as a product name, so it was selected as the company's new name as well.

Hastings attributes the continuing success of Pinpoint products to several factors they all have in common. They're all well-written, with plenty of capabilities above and beyond the minimum; they're easy to use; they're reasonably priced; they perform the kinds of tasks people find genuinely useful. There are new products in the works based on these same criteria — the *Pinpoint Toolkit*, for creating custom desktop accessories, and the *Information Engine*, a revolutionary, easy-to-use information retrieval system.

And, although Pinpoint develops software for other machines and markets, both Hastings and Skiba have a certain fondness for the Apple and its users. It's more rewarding developing software for Apple users, they say, because they're more personally involved with their machines and take a livelier view of the possibilities, in contrast to IBM users who, they say, tend to use their machines for performing routine tasks at work. They find the II a remarkably efficient machine, citing the example of one of their programs which exists in both Apple and IBM versions and runs twice as fast on the Apple. And they applaud the machine's longevity and durability, though it leads to some unexpected complications — "We've been trying to kill our Apple II+ cookbook for two years," groans Skiba, "but people keep buying it."

Pinpoint has worked extensively with Apple in developing its desktop accessory program, and in general Skiba and Hastings find that the company's role has been very positive — helping them create better designs and make better marketing decisions, as well as providing opportunities for contact with other developers and with users.

> ***"Apple had the idea that other people can contrlbute more to the product than they can do themselves."***

The philosophy, says Hastings, goes back to Apple's early days, when the computer was deliberately built with an open architecture that invited tinkering and customization. "Apple had the idea that other people can contribute more to the product than they can do themselves. And I think that because that was successful, IBM elected to build the PC the way they did, with slots and open architecture. But what IBM failed to do was be a good partner. Apple has had periods where they've been less a partner, and those are the periods where you start losing hair . . ."

Chimes in Skiba, "Their biggest weakness is obviously their schizophrenia with Macintosh and how they're going to treat the Apple II . . ."

But they both believe that the Apple II will triumph over its recent adversities and continue to be a vital force in the marketplace. They also believe that this success will be due to the efforts of third-party developers such as Pinpoint, who keep making new and exciting options available to the machine's users. "We'd like nothing better," muses Hastings, "than to see the headline: 'Cookbook Company Saves Two Billion Dollar Computer Firm.'" (Pinpoint Publishing, P.O. Box 13323, Oakland, CA 94661, (415) 530-1726.)

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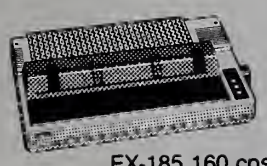

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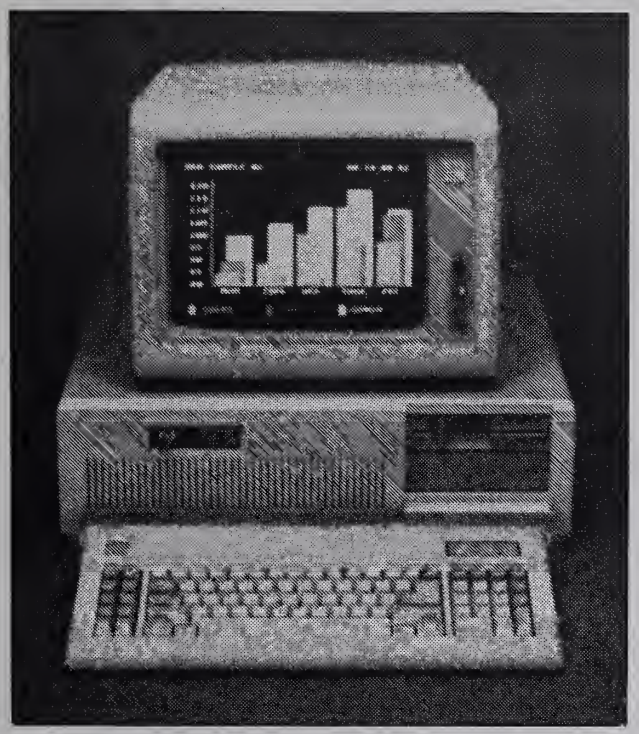

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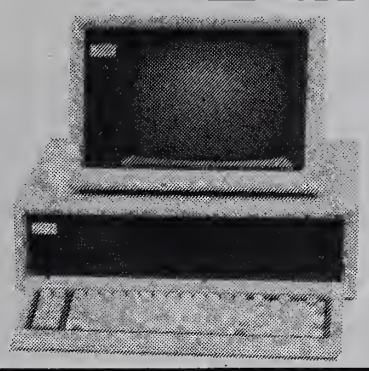

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Electronic Arts:

II Faces Uncertain Future In Gaming World

By his own admission, Bing Gordon of Electronic Arts is a serious gamer, spending between 30 and 50 hours a month on computer games.

At the moment, showing off EA's latest Apple II release, *The Bard's Tale*, he's not a happy man. His stalwart henchman Brian the Fist has just met a gory death at the hands of a marauding band of dwarves. The rest of his trusty band isn't doing a whole lot better, and the prospects of amassing treasure, or of even emerging from the adventure alive, look pretty bleak.

But despite this temporary adversity, Gordon is enthusiastic about *The Bard's Tale*. It's a classic manifestation of EA founder Trip Hawkins' "simple, hot and deep" credo — easy to learn, immediately exciting, and capable of sustaining interest over hours of playing time and increasing skill. In the Dungeons and Dragons tradition, *The Bard's Tale* provides a smorgasbord of characters, spells, and what Gordon calls "hack and slash." Unlike many more primitive examples of the genre, *The Bard's Tale* features an interactive plot with increasing levels of sophistication: the neophyte gamer embarks on his mission, begins by encountering relatively weak and dimwitted monsters and adversaries, and hones his skills by doing battle with them. As his technique and strategy improve, he goes on to more challenging conflicts and an ever-changing series of dungeons. By conservative estimate, it takes 120 hours to master all the skill levels of *The Bard's Tale*, and the gamer will find his powers of logic, ingenuity and strategy severely taxed.

Which is just how Gordon — who bought his first Apple II+ in 1979, upgraded to a IIe, and uses his computer "for playing games *only*" — likes it. "I like the world inside the computer that I get to try and outwit, and move through and discover, and find the little treasures that the author has put in there for me," he says.

Historically, the Apple II has provided a good market for Electronic Arts, a close second only to Commodore — which is pretty remarkable, considering the number of C64s that have been snapped up for $150 or so at Payless. This year, the company is releasing 14 new programs for the II. But for a variety of reasons, it perceives the II's future as uncertain.

With the occasional exception, most of Electronic Arts' products are recreational in nature, the typical customer, according to Gordon, being 25–40 years old, buying software for his own enjoyment, much like books or records. Having achieved considerable success in this marketplace, Electronic Arts is a well-established company with a marketing strategy that's fairly radically different from Apple's, more so with the passage of time and frequent policy shifts in Cupertino. Consequently, Gordon says EA's experience with Apple differs considerably from the highly supportive arrangement other software companies describe, probably because Apple sees itself as addressing a different set of prospective consumers. "Our relationship with Apple hit a nadir at the beginning of this year when [Apple president/CEO John] Sculley said, 'There is no home market,'" Gordon recalls.

PHOTO: PAT JOHNSON STUDIOS

Things are looking bleak for Bing Gordon in *The Bard's Tale*. Marauding dwarves have just done in Brian the Fist.

"The last couple of years Apple has been denying the importance of the home market, so they've been less useful to us. We just don't make appliance software, so that's been a stumbling block."

"I think they're going through too many tough times right now to be easy to work with. With the Macintosh, with their software evangelists, they really bent over backwards to make software happen. But they tended to work best with one-man banana-stand companies who weren't currently publishing software.

"Now, with their emphasis on the II, what they're looking for for the II is a word processor that looks like *MacWrite*, they're looking for desk accessories that work with *AppleWorks*. The last couple of years Apple has been denying the importance of the home market, so they've been a little less useful for us. We have seen that the heart and soul of Apple sales have been into the home, and we're making software to help that. We just don't make appliance software, so that's been a stumbling block."

As to the II's probable longevity in the games market, Gordon expresses mixed views. On the one hand, he says, many of the perceived limitations of the 6502 chip, particularly speed, are more the result of software design than of any intrinsic properties of the chip itself. *Wizardry*, he says, runs slowly on the Apple because it's written in Pascal, a high-level language. *Bard's Tale*, on the other hand, is written in assembler, much closer to machine language, so it runs quite fast on a 64K Apple.

However, he says, the marketplace is changing, and as memory and storage capability become cheaper, "the Apple II is going to run out of gas." This year, Electronic Arts is indeed releasing 14 products for the II, but it's also putting out eight for the Amiga. The Amiga software runs fast and has gorgeous, and extremely memory-hungry, graphics that the Apple just can't match — to say nothing of excellent sound capability. Gordon suspects that as the Amiga and similar machines become more entrenched, and as gamers become accustomed to a higher standard of sound and graphics, the Apple II will be left in the dust — and that, in the games market at least, the Apple will begin to lose the software edge that's kept it going for so long.

"I get a lot of pleasure out of my Apple II," he says, "However, if there were the same great designs on the Amiga with stereo sound and computer screens that it takes 64K to draw a bit map of—that's going to get addictive. After you've played awhile on something like that, it's going to feel a little bit ancient to get back on a machine with 8K screens where the sound is like burps and chirps. And the processor is slower.

"For me as a consumer to want to still be using my Apple by next Christmas, there has to be unique software on the Apple that I can't get on any other machine. And if I can play *Bard's Tale* on Apple or Amiga, or *Ultima IV* on Apple or Amiga, I'm going to play it on an Amiga, because it sounds better and looks better there." (Electronic Arts, 2755 Campus Drive, San Mateo, CA, (415) 571-7171.)

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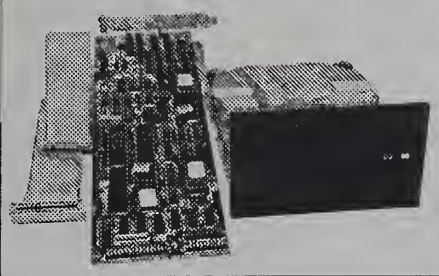

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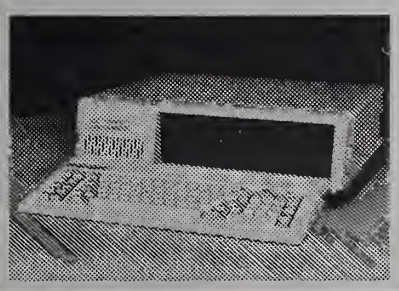

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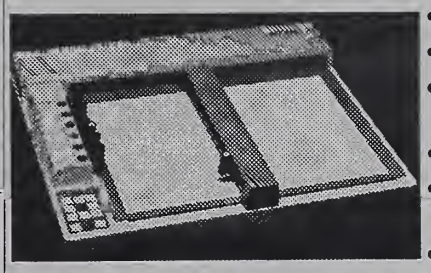

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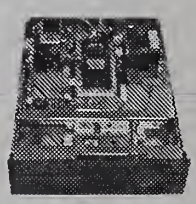

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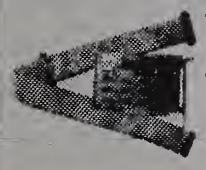

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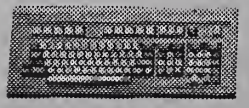

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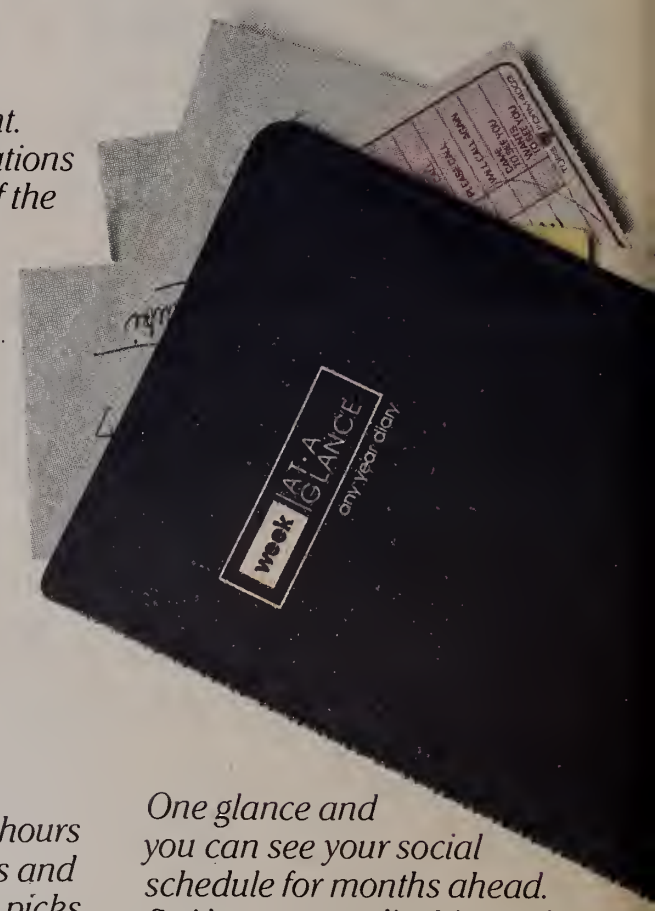

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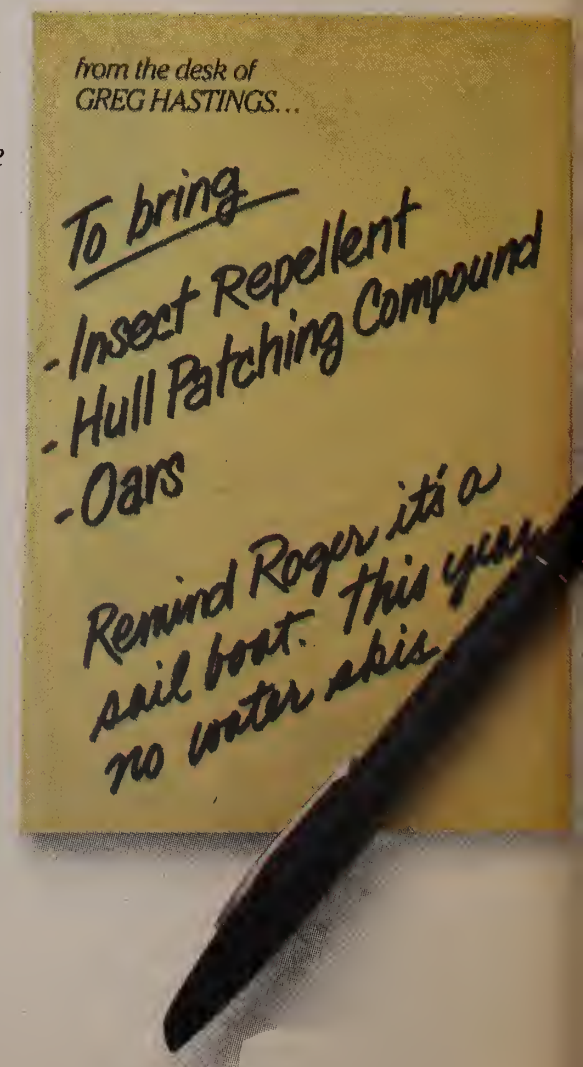

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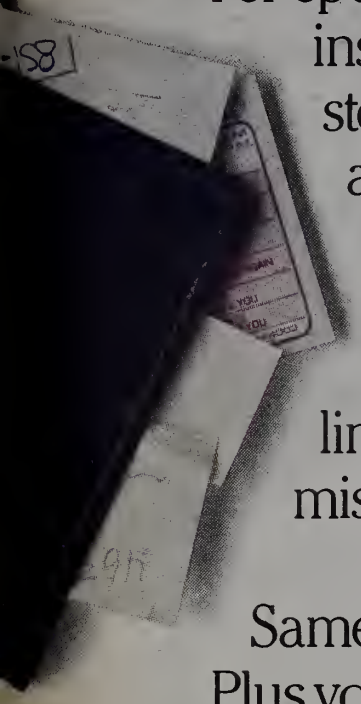

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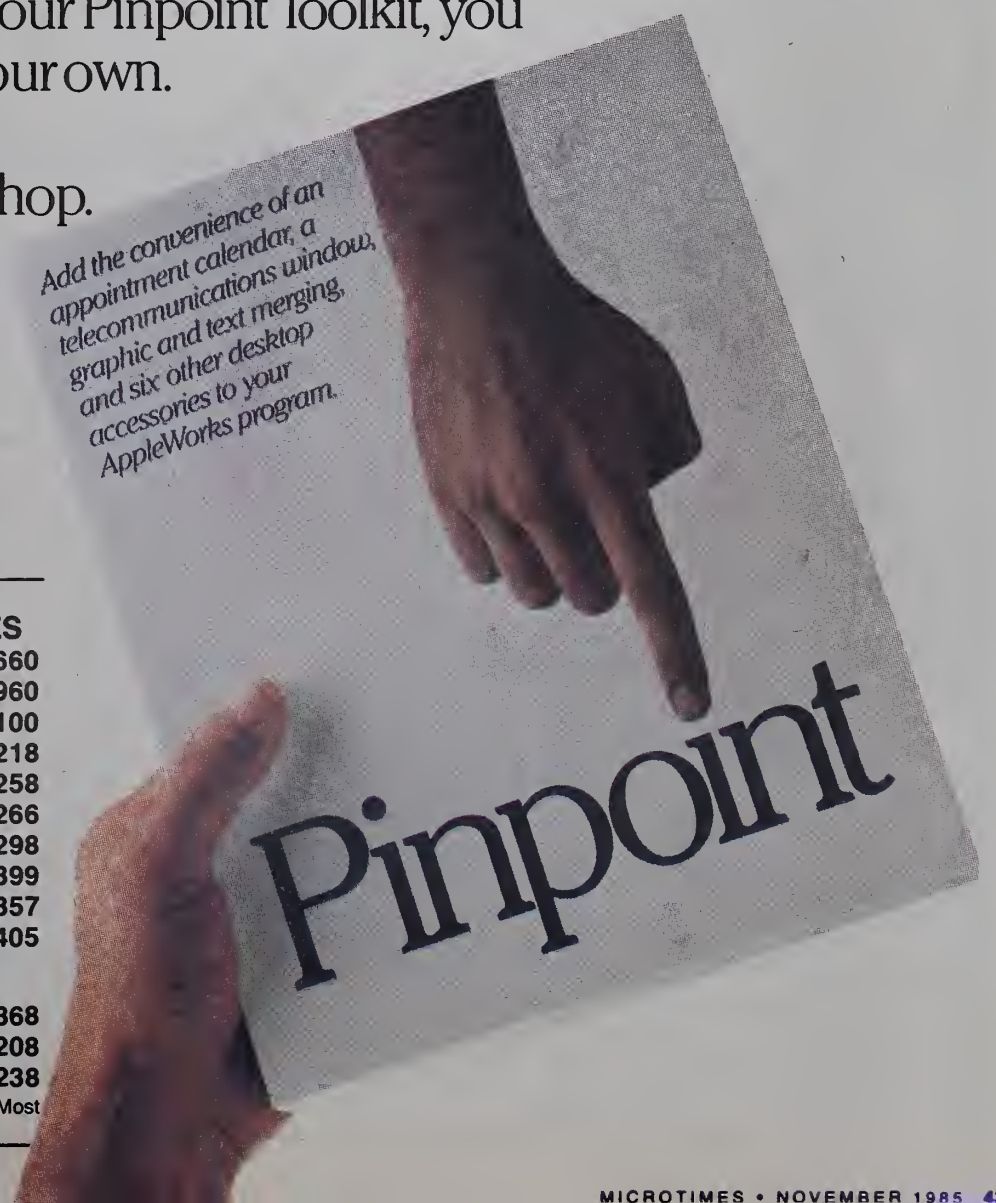
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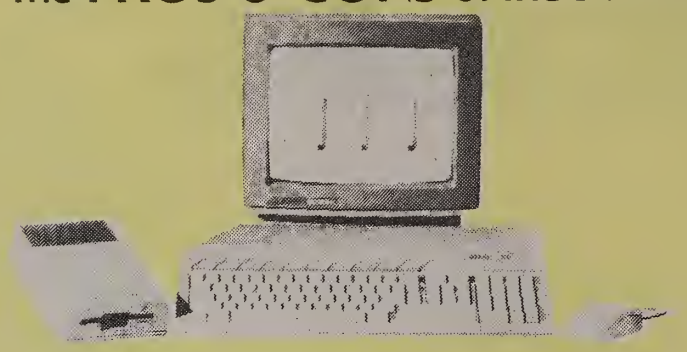

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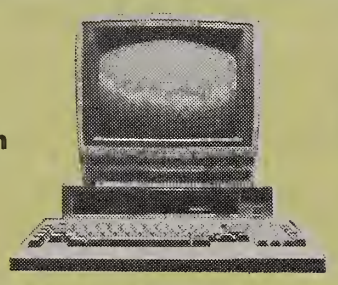

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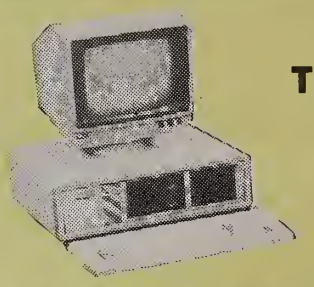

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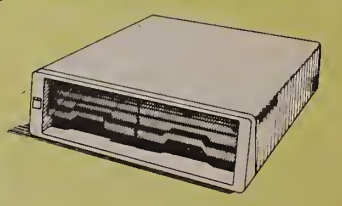

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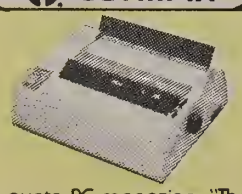

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Information Appliance:

The Next Revolution?

Jef Raskin believes that computers should be easy to use. How easy? Well, he calls his company Information Appliance, and favors computers as hassle-free as toasters.

By contrast, Raskin says, the current state of the industry more closely resembles a scenario conjured up by Douglas Adams (of *Hitchhiker's Guide To The Galaxy* fame). "Adams was describing some imaginary product of the future, and he said that people get such a sense of achievement from having mastered it that they forget how useless it is. I think that's really a key problem in the industry today—a person works on the computer and they get all this mastery, and they just forget all the little gut-wrenching annoyances they went through when they used it first."

Raskin, be it duly noted, is not your basic unregenerate technophobe. Among other things, he conceived the idea for Macintosh, named the machine and assembled its first design team. Perhaps because his earliest work in the field had to do with writing documentation — i.e. rendering the machine comprehensible to the user — simplicity and utility were his chief concerns: "I came into this industry not as a hardware or software hacker, but as a writer," he recalls. As a consequence, he often found himself challenging commonly-held assumptions; he recalls an early disagreement with the Powers That Be: "They were doing this INIT program to format a disk, and I said, 'Well, why don't you just take a look at the disk display, do the initialization, don't even tell the user you're doing it, just go ahead and do it.' And they said, 'That's not the way it's done.'"

In its current incarnation, says Raskin, the Macintosh doesn't approach the ease of use he had in mind. So, when he left Apple in 1982, he formed his own company with the intention of bringing some of his original ideas to fruition. Information Appliance's first offering is SwyftCard, an $89.95 card that plugs into one of the Apple IIe's slots and allows the machine to perform word processing (including printing and mailmerge), information retrieval, telecommunication and calculation functions as simply and intuitively as if, to use one of Raskin's favorite analogies, Maytag had finally built a computer.

Take word processing. You sit down at your IIe. You turn the machine on. The screen lights up immediately. You type in whatever your heart desires — say, tonight's grocery shopping list. You hit the key assigned to the Print command (there are only five commands SwyftCard uses). As fast as your printer can do it, your document is there. "Isn't that extraordinary?" says Raskin sardonically. "Computers as fast as an electric typewriter."

Suppose you want to save that grocery list. No problem — take a nice blank diskette and put it in the disk drive (in case you missed this aspect of the situation, everything you've done up to this point has required no software whatsoever). Uh-oh, you don't have any formatted diskettes. Once again, no problem. Put that blank unformatted diskette in the drive, hit Disk (another command), and, literally before you can blink, the disk is formatted and your data safely stored thereon. You can also use a diskette that you've previously used with SwyftCard. If, by some chance, you inadvertently put in the diskette for *Music Construction Set* instead, SwyftCard immediately recognizes that this is a foreign diskette, turns itself off and puts you right back in Apple's operating system.

Which brings up the matter of operating systems. SwyftCard doesn't have one. "It's totally unnecessary," maintains Raskin. "That's one thing I've believed for years. I'll give you my definition of an operating system. An operating system is that program you have to wrestle with before you wrestle with the application program. They are a nuisance."

So you've saved the shopping list. You proceed to get on with your work. After several hours have gone by, you discover that you've lost your printed-out copy of the list (or perhaps the dog ate it). You don't remember the file name, or even if you remembered to name it. What you do remember is that it called for hamburger. Enter SwyftCard's information retrieval function. Depressing one of the Leap keys (there's one for forward and one for backward), type in "hamburger." Again instantaneously, the screen displays the closest block of text containing the word "hamburger." If it isn't the right text, leap again until you get there. Also, if your memory is a little fuzzy as to where the document in question is on the diskette, SwyftCard will search the whole diskette automatically (i.e., if what you want isn't really forward, it's backward, SwyftCard will look in both directions). And if it isn't there, SwyftCard will search the diskette and then return to your position in your current document. This works equally well if you're in the middle of a letter and have to find Aunt Mildred's address — SwyftCard indexes every character or word in every document. And the information is retrieved instantaneously, without disk swapping, opening and closing of files, or other cumbersome procedures. And although SwyftCard gives you the option of using various formatting commands when you print your document, it doesn't require you to use them—it prints the document exactly as it appears on the screen.

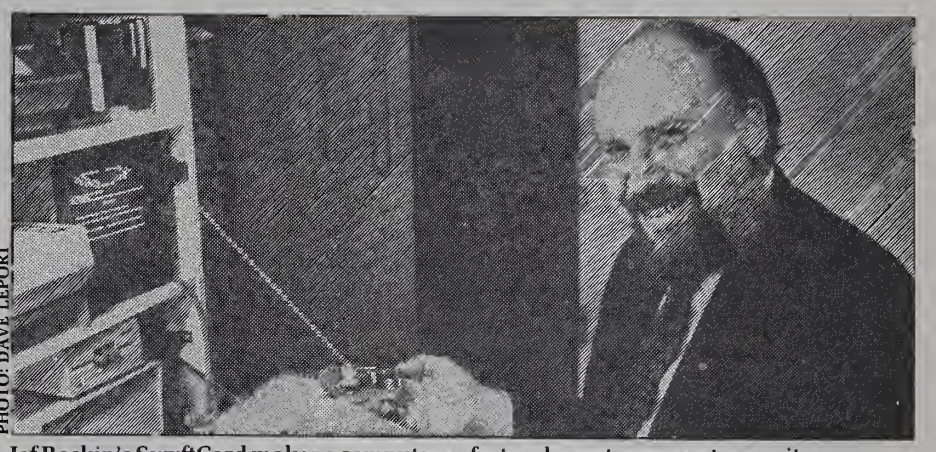

PHOTO: DAVE LEPORI

Jef Raskin's SwyftCard makes a computer as fast and easy to use as a typewriter — with much more versatility.

"If you just want to get the job done, nothing in the world is as fast or as easy to use as this. Period."

Other functions are just as easy. You can perform mathematical calculations as the need arises, without leaving the document you're working on. You can communicate with networks like The Source or CompuServe without having to deal with their editor functions; data are up- and downloaded directly between the network and SwyftCard's editor. Also, if you have documents that you've already created on your Apple using ProDOS software, and you'd like to work on them with SwyftCard, you'll be glad to know that the card is able to convert ProDOS files to SwyftCard files and vice versa, 40K at a time.

There are a few inherent limitations, storage being one of the obvious ones. Essentially, the capacity of the memory is the same as the capacity of the diskette, so if you're writing the Great American Novel you're going to need a lot of diskettes. And Raskin points out that SwyftCard doesn't do spreadsheets, have exotic fonts and formatting capabilities for typesetting, or play games. However, SwyftCard makes it extremely easy to use a computer for most of the reasons an individual or small business would buy one for; it was extensively tested by 1500 home, education and business users before being released last month, and various businesses are using it quite happily (including Information Appliance, which performs all office operations except spreadsheets with it).

"Every other project I've worked on [for other people] has gotten more and more complex, much to my disgust and horror," says Raskin. "On this one, now that I'm CEO of the company, I can say 'No, SIMPLICITY!!!' That's the aim of this company." And while he'll admit that there are other projects in the works at Information Appliance, he won't say what they are. "We don't talk about unannounced products," he says. "We never even talked about this before it was available. Yes, we're going to do other things in the future. Yes, we have some really nifty things we're working on. People make all kinds of guesses. And we're not going to say."

Raskin remains cautious about the card's impact on the rest of the industry — "Remember," he observes, "that icons and windows were around for ten years before anybody used them in any commercial product." Still, it seems rather likely that SwyftCard's radically simple interface will send lots of manufacturers and developers back to the drawing board. It may also make the Apple IIe the machine of choice for victims of computer terror in search of efficient tools. "You want to get the idea from your head onto the paper," says Raskin. "You want it to work every time without failure, and *fast*. Get it done — that's the whole idea. We're practical people. For people who need toys, for people who want toast in 15 colors of red, fine. Use Macintosh or IBM PC. But if you just want to get the job done, nothing in the world is as fast or as easy to use as this. Period." (Information Appliance Inc., 530 University Avenue, Palo Alto, CA 94301, (415) 328-5160.) □

An Introduction To DOS

Although the sheer number of DOS commands can be intimidating, learning to use the features of DOS proficiently will make your tasks on the computer more enjoyable and productive.

By Seth Novogrodsky

If you own or use an IBM or IBM-compatible personal computer, you will almost certainly have to become familiar with DOS, formally referred to as PC-DOS or MS-DOS. PC-DOS is IBM's version of MS-DOS, an operating system licensed from Microsoft Corporation. Most programs designed to run under MS-DOS will work on both IBM personal computers and computers said to be IBM compatible.

There are exceptions, however. Some programs will run only on IBM machines, because they are designed specifically for the IBM hardware. These programs usually require information that is contained only in the ROM (Read Only Memory) copyrighted by IBM. Very few programs fall into this category.

In addition, some computers, such as the Apricot line of computers from ACT, deviate greatly from the IBM standard, even though they run MS-DOS. The Apricot computers have a different keyboard and have 3.5-inch disk drives instead of the 5.25-inch disk drives found in most MS-DOS machines.

Also, IBM has released at least six versions of DOS to date (DOS 1.00, 1.10, 2.00, 2.10, 3.00, and 3.10), and there are certain incompatibilities between these versions.

DOS is an acronym for Disk Operating System. An operating system is the intermediary between you, the computer, and the software you need to run. DOS is a collection of programs that perform a variety of useful tasks. Some of these tasks you will perform every day; others, such as those designed for experienced programmers, you may never use at all.

The following discussion provides a brief overview of the most common DOS commands for those just starting with a computer that runs MS-DOS. DOS is what allows you to store and retrieve files on disks. These files may contain programs (instructions that tell the computer what to do), or data, (such as a letter to a friend or your financial records). DOS will allow you to create, copy, remove, and rename files, and perform other useful functions as well.

DOS is ready to execute a command whenever the prompt is displayed. The report is normally of the form "A>," A being the disk drive designator. (The first disk drive is A:, the second B:, the third C:, and so on.) DOS commands can be divided into two categories: internal and external. An external command is a program contained in a separate file on the DOS disk. To use an external command, you must have the DOS disk in your disk drive, or the command must be copied onto the disk you are using. Whenever you perform an external command, the program corresponding to the command is temporarily loaded into the computer's internal memory from the DOS disk. Internal commands, such as **DIR, COPY,** and **ERASE** (all discussed below), are always available for use whenever the DOS is loaded into the computer's memory. Tables 1 and 2 list some common internal and external commands and their formats:

Table 1

COMMON INTERNAL COMMANDS

COMMAND	PURPOSE
CLS	Clear screen
COPY [/A] [/B] [d:] [path] [filename[.ext]] [/A] [/B] [d:] [path] [filename[.ext]] [/A] [/B] [/V] or COPY [/A] [/B] [d:] [path] [filename[.ext]] [/A] [/B] [+[d:] [path]filename[.ext] [/A] [/B]...] [d:] [path] [filename[.ext]] [/A] [/B] [/V]	Copy files
DATE [mm-dd-yy]	Enter date
DIR [d:] [path] [filename[.ext]] [/P] [/W]	Display directory
ERASE (or DEL) [d:] [path] [filename[.ext]]	Remove files
REN[AME] [d:] [path]filename[.ext] filename[.ext]	Rename files
TIME [hh:mm:ss.xx]	Set time
TYPE [d:] [path]filename[.ext]	Display file

Table 2

COMMON EXTERNAL COMMANDS

COMMAND	PURPOSE
CHKDSK [d:] [filename] [/F] [/V]	Display disk status
COMP [d:] [path] [filename[.ext]] [d:] [path] [filename[.ext]]	Compare files
DISKCOMP [d:] [d:] [/1] [/8]	Compare disks
DISKCOPY [d:] [d:] [/1]	Copy disks
FORMAT [d:] [/S] [/1] [/8] [/V] [/B]	Initialize disk
PRINT [[d:] [filename[.ext]] [/T] [/C] [/P]...]	Print files
SYS d:	Install DOS

(Note: Items in brackets are optional. A detailed discussion of the commands and their options can be found in the DOS manual.)

Each file on a disk must have a name such as **LETTER, FINANCE.DAT, TESTFILE,** and **FILE12.234.** The name of a file can be from one to eight characters long. If you wish, you can add a period and an extension of one to three characters. You can use any combination of letters and numbers, as well as a few special characters including $, ^, %, !, or #, in the name of the file.

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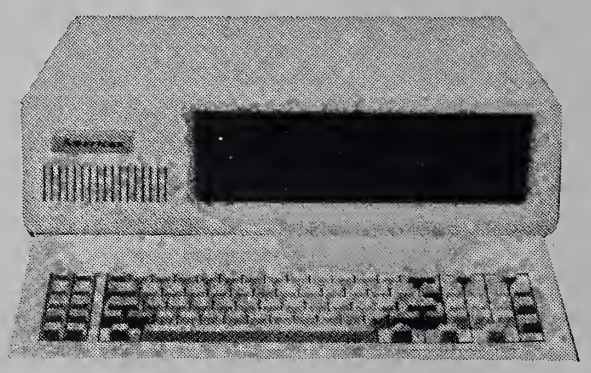

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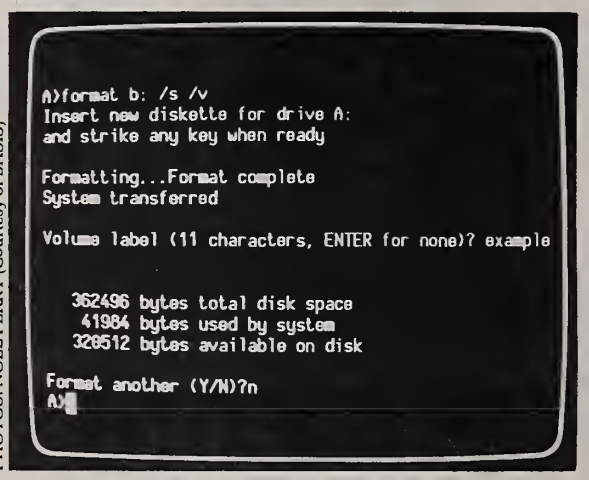
You can type in upper or lower case letters, but DOS converts lower case letters to upper case.

Before a disk can store files, however, it has to be formatted. Formatting blank disks is one of the first tasks you'll have to perform with DOS. A disk only has to be formatted once. Generally, you only format blank disks. Because the formatting process erases any files on a disk, you should use the **FORMAT** command cautiously. Figure 1 shows what the screen looks like when you execute the format command. **FORMAT** will prepare a blank disk so that files can be stored on it by electronically partitioning it into areas called sectors. Because the **FORMAT** command is external, you must have the DOS disk in the disk drive, you will have to remove the DOS disk, insert the blank disk, and reinsert the DOS disk when you're finished formatting the disk. Note that you can format any number of disks by typing the letter Y (or y) in response to the "**Format another (Y/N)?**" request. As with many DOS commands, there are a number of options you can use with the format command. An example of a common use of the format command follows:


A>format b: /s /v
Insert new diskette for drive A:
and strike any key when ready
Formatting...Format complete
System transferred
Volume label (11 characters, ENTER for none)? example
362496 bytes total disk space
41984 bytes used by system
320512 bytes available on disk
Format another (Y/N)?n
A>

PHOTOS: NOEL PERRY (Courtesy of BASIS)

Figure 1

```
A> FORMAT B: /S /V
Insert new diskette for drive B:
and strike any key when ready
Formatting...Format complete
System transferred
Volume label (11 characters, ENTER for none)?
example
  36249 bytes total disk space
   40960 bytes used by system
  321536 bytes available on disk
Format another (Y/N)?n
A>
```

The **/S** option instructs the computer to put three operating system files on the disk in addition to formatting it. These files are **COMMAND.COM** and two hidden files (which do not appear in the directory — see below). By having these files on the disk, you will be able to "boot" (that is, power up or reset the computer and have the essentials of DOS loaded automatically into the computer's memory) from this disk and execute internal DOS commands. These files are convenient to have on all your program disks. The disadvantage is that they take up about 40K of storage space on the disk. (A standard disk holds 360K.) The **/V** option allows you to specify a volume label of up to eleven characters. A volume label is simply a name that you give to a disk. The volume label appears whenever you display a directory of the files on the disk (see below).

There are two other options used with the **FORMAT** command that you should be aware of, although you may never need to use them. The **/1** option will cause only one side of the disk to be formatted. When the IBM Personal Computer was first announced, only single-sided disk drives were available for it. If you want to exchange disks with someone who has only single-sided disk drives, you will have to use this option. The **/8** option will cause eight sectors per track to be formatted, which results in 322560 bytes of storage on a double-sided disk, rather than the usual 362496 bytes (nine sectors per track). The versions of DOS prior to 2.00 (DOS 1.00 and 1.10) cannot read the nine sector format. If you want to exchange disks with people running these operating systems, you will have to use this option. Whenever you use this option, you will not want to use the **/V** and **/S** options, since DOS 1.00 and 1.10 do not recognize volume labels and require different versions of **COMMAND.COM** and the two hidden files mentioned above.

Whenever you execute the **FORMAT** command, a directory is created on the disk. The directory will contain a list of all the "non-hidden" files on the disk. A hidden file is simply a file that is not listed in the directory and cannot be accessed via the standard file manipulation commands available in DOS. (A directory can also contain the names of sub-directories, which are themselves directories. To gain access to a file in a sub-directory, you generally must specify a path, which tells DOS where to find the file.)

DIR is an internal command that displays the names of all the non-hidden files in a directory, along with the size in bytes of each file as well as the time and date the file was last modified. In order to make sure that the proper time and date will appear, you must enter the time and date when you first power up your PC. Alternately, you can use the internal commands **TIME** and **DATE** whenever the DOS prompt is displayed. (Some PCs have a battery powered clock/calendar installed. In that case, the correct time and date will be set automatically.)

When you type **DIR** and press return, DOS displays a directory listing like the one below. If the directory is larger than can be displayed on the screen, you can use the command **DIR /P** to have the computer pause when the screen is full. During the pause, you will be given a prompt to press any character key to see the rest of the directory. DOS can also display a directory in a wide format. In wide format five file names per column are displayed instead of the usual one, and the size, time, and date are not shown. To see a wide directory you type **DIR /W** and press the enter key. You should use the **/W** option, however, only if you have an 80 column display. Figures 2 and 3 show a standard directory listing and a wide directory listing.

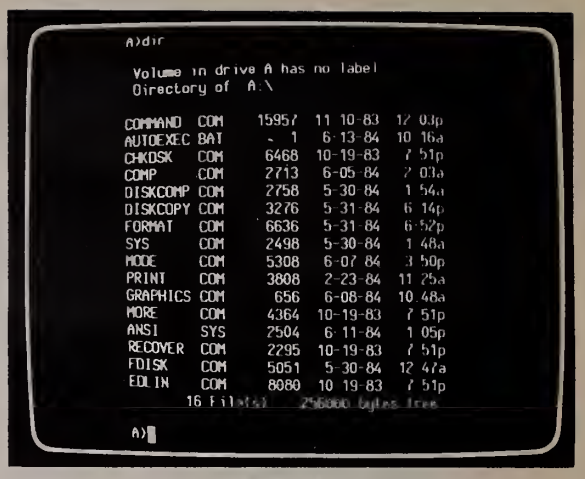

A>dir
Volume in drive A has no label
Directory of A:\
COMMAND COM 15957 11-10-83 12:00p
AUTOEXEC BAT 1 6-13-84 10:16a
CHKDSK COM 6468 10-19-83 7:51p
COMP COM 2713 6-05-84 2:03a
DISKCOMP COM 2758 5-30-84 1:54a
DISKCOPY COM 3276 5-31-84 6:14p
FORMAT COM 6636 5-31-84 6:52p
SYS COM 2498 5-30-84 1:48a
MODE COM 5308 6-07-84 3:50p
PRINT COM 3808 2-23-84 11:25a
GRAPHICS COM 656 6-08-84 10:48a
MORE COM 4364 10-19-83 7:51p
ANSI SYS 2504 6-11-84 1:05p
RECOVER COM 2295 10-19-83 7:51p
FDISK COM 5051 5-30-84 12:47a
EDLIN COM 8080 10-19-83 7:51p
16 File(s) 256000 bytes free
A>

Figure 2

```
A>dir b:
Volume in drive B is EXAMPLE
Dirctory of B:/
COMMAND  COM    17792  10-20-83  12:00p
ANSI     SYS     1664  10-20-83  12:00p
FORMAT   COM     6912  10-20-83  12:00p
CHKDSK   COM     6400  10-20-83  12:00p
SYS      COM     1680  10-20-83  12:00p
DISKCOPY COM     2576  10-20-83  12:00p
DISKCOMP COM     2188  10-20-83  12:00p
COMP     COM     2534  10-20-83  12:00p
EDLIN    COM     4608  10-20-83  12:00p
MODE     COM     3139  10-20-83  12:00p
FDISK    COM     6369  10-20-83  12:00p
BACKUP   COM     3687  10-20-83  12:00p
RESTORE  COM     4003  10-20-83  12:00p
PRINT    COM     4608  10-20-83  12:00p
RECOVER  COM     2304  10-20-83  12:00p
ASSIGN   COM      896  10-20-83  12:00p
TREE     COM     1513  10-20-83  12:00p
GRAPHICS COM      789  10-20-83  12:00p
SORT     EXE     1408  10-20-83  12:00p
FIND     EXE     5888  10-20-83  12:00p
MORE     COM      384  10-20-83  12:00p
BASIC    COM    16256  10-20-83  12:00p
BASICA   COM    26112  10-20-83  12:00p
23 File(s)          204800 bytes free
A>
```

COPY is one of the most commonly used DOS commands, an internal command that enables you to make copies of files. (One general point worth noting: if a file is worth keeping, it is worth making at least one backup copy on another disk as a safety precaution.) To make a copy of a file, type **COPY** followed by the name of the file you want to copy and the name of the new file. Be sure to choose a name for the new file that is different from the name of an already existing file; if the named file already exists, it will be erased and replaced by the copy. If you want to make a copy of the file **LETTER,** for example, and have the copy called **NOTE** you type **COPY LETTER NOTE.** To copy a file onto another disk and keep the name of the file the same, type **COPY,** followed by the name of the file you want to copy and the disk drive designation letter of the drive containing the disk for the copy of the file. To copy a file called **FILEONE** onto another disk, for example, you type **COPY FILEONE B:.** You can also copy a file onto another disk and give it a different name. To give the file a new name, instead of typing just **B:**, type **B:** followed by the new name. For example, to copy **FILEONE** onto disk **B:** and call it **FILETWO**, type **COPY FILEONE B:FILETWO.**

As with the **FORMAT** command, there are options that you can use with the copy command.

A>dir /w
Volume in drive A has no label
Directory of A:\
COMMAND COM AUTOEXEC BAT CHKDSK COM COMP COM DISKCOMP
DISKCOPY COM FORMAT COM SYS COM MODE COM PRINT
GRAPHICS COM FILEONE MORE COM COPY XXX ANSI
COPY BAK RECOVER COM FDISK COM EDLIN COM
19 File(s) 252928 bytes free
A>

Figure 3

```
A>dir/w b:
Volume in drive B is EXAMPLE
Directory of B:/
COMMAND  COM  ANSI     SYS  FORMAT   COM  CHKDSK   COM  SYS      COM
DISKCOPY COM  DISKCOMP COM  COMP     COM  EDLIN    COM  MODE     COM
FDISK    COM  BACKUP   COM  RESTORE  COM  PRINT    COM  RECOVER  COM
ASSIGN   COM  TREE     COM  GRAPHICS COM  SORT     EXE  FIND     EXE
MORE     COM  BASIC    COM  BASICA   COM
23 File(s)          204800 bytes free
A>
```

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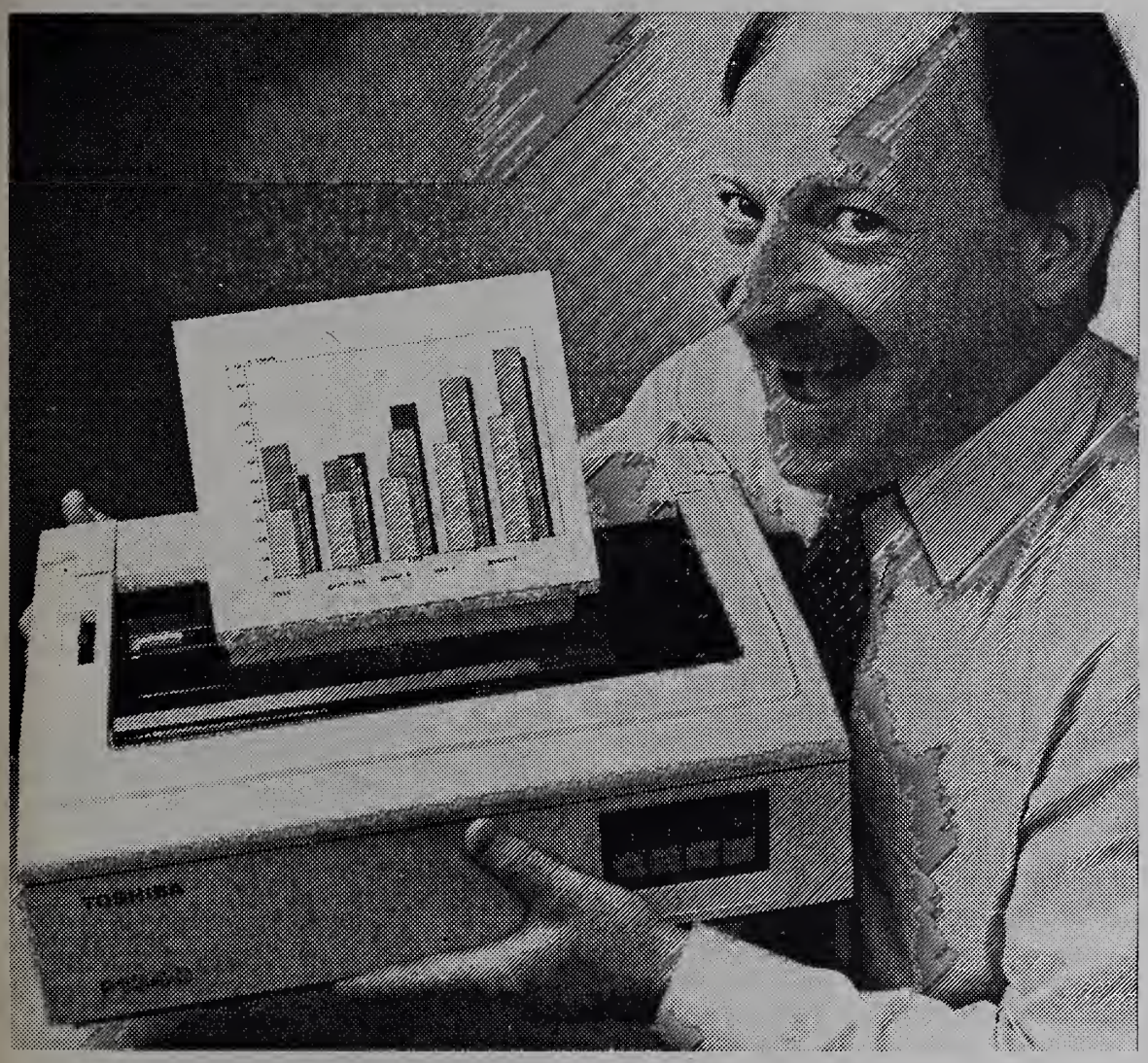

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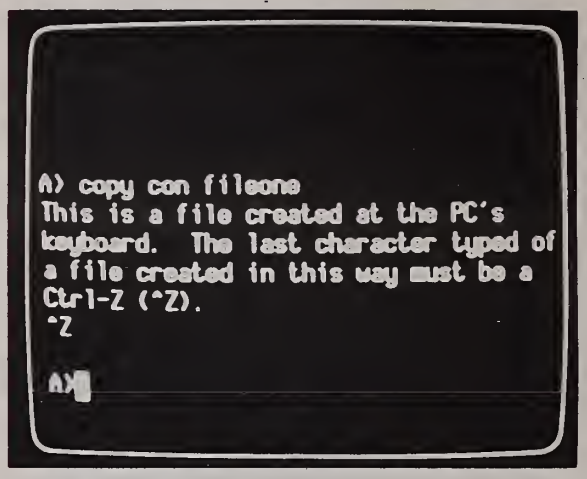
The **/V** option causes DOS to automatically compare the original file to the copy in order to make sure that no errors were made during the copy process. There is also an external command called **COMP** that will determine whether two files are identical. The format of this command is very similar to the format of **COPY.**

You can also use the copy command to create a file. Figure 3 illustrates the process of creating a file directly from the keyboard.


A) copy con fileone
This is a file created at the PC's keyboard. The last character typed of a file created in this way must be a Ctrl-Z (^Z).
^Z
A)

```
A> copy con fileone
This is a file created at the PC's keyboard. The last
character typed of a file created in this way must be a
Ctrl-Z (^Z).
^Z
A>
```

Figure 4

In this example, **CON** is the name of the standard input/output device (keyboard and screen), which the copy command interprets as the name of a file. **FILEONE** is the name of the file we want to create. The text on the lines following the **COPY** command is what we typed from the keyboard. The last character we type in the file is a **Ctrl-Z** (a Z typed with the **Ctrl** key held down). This character is the end of file marker — it tells DOS that it has reached the end of a file. To view this file, you can use **TYPE,** an internal command that will print the contents of the file on the screen. You should only use the **TYPE** command on files that contain text; otherwise, your screen may be filled with incomprehensible garbage characters. Likewise, you can use the **PRINT** command to print a file on a printer. **PRINT** is an external command. The **COPY** command has one further use: it can be used to concentrate two or more files into a single file. For example, the command **COPY SMALL + LITTLE + LITTLE2 BIG**.

Another useful internal command is **RENAME,** which can be abbreviated as **REN.** This command simply changes the name of a file. For example, typing **REN MYFILE YOURFILE** will change the name of **MYFILE** to **YOURFILE**. The contents of the file will, of course, remain unchanged. It is generally a good idea to pick names that are easy to remember. If you change the names of your files often, you may forget what information is in which file.

The **ERASE** command is used to remove unwanted files. The **DEL** command is exactly the same as **ERASE.** To use this command, just type **ERASE** or **DEL,** followed by the name of the file that you wish to erase. For example, to erase **FILETWO,** you can type **DEL FILETWO.** You should only use this command if you are sure that you want to delete the file, since you may not be able to recover the information in the file if you later change your mind.

DISKCOPY is an external command that copies entire disks. If you want to copy all the files on drive **A:** onto drive **B:**, you would insert the DOS disk and type **DISKCOPY A: B:**. You will be instructed to insert the source disk (i.e., the disk to be copied) into drive **A:** and the target disk (i.e., the disk to contain a copy of the contents of the disk in drive **A:**) into drive **B:**. This command makes it easy to make backup copies of your disks. You should always have backup copies of all your software and other important files. If you have only one disk drive, you will have to swap disks back and forth when you use this command. You can copy more than one disk with this command if you type Y (or y) in response to the "**Copy another (Y/N)?**" query that DOS will display after copying a disk. **DISKCOMP** is an external command that will verify that the contents of two disks are identical.

CHKDSK is a commonly used external command that will display some useful information about a disk. It will display the number of bytes of total disk space, the number of bytes free, the number of hidden files, the number of user files, etc. Unless you have the **CHKDSK** file on the disk you want to check, you will have to insert the DOS disk. If you have only one disk drive, you will have to swap disks. You can also specify the name of a file with **CHKDSK** (e.g., **CHKDSK FILEONE**). If you do, the number of non-contiguous areas on the disk that the file occupies will also be displayed.

There are two options that you can use with the **CHKDSK** command. The **/F** option will have the computer correct any errors that it might find in the directory of the file allocation table. Normally, there won't be any errors. The **/V** option will cause **CHKDSK** to display some useful messages as it analyzes the disk. Figure 5 shows the output of the **CHKDSK /V** command.

Figure 5

```
A>CHKDSK
  362496 bytes total disk space
   22528 bytes in 2 hidden files
  135168 bytes in 23 user files
  204800 bytes available on disk
  524288 bytes total memory
  104880 bytes free
```

Another external command that you should be familiar with is **SYS.** The **SYS** command transfers the essential DOS files to a commercial program that requires DOS but doesn't come with it. You will use the command in the form **SYS B:** (or **A:** or whatever drive contains the disk to receive the system files). You shouldn't use this command unless it says to do so in the software documentation.

The DOS commands described above should be sufficient to get you started. Most applications programs will insulate you from the complexities of DOS. Once you have mastered the basics of DOS, however, you will be able to get much more utility out of your computer. There are many other useful DOS commands, and we have only just barely scratched the surface of the commands that we have described. You should feel free to experiment with these commands and peruse the DOS manual. Although the sheer number of DOS commands can be intimidating, learning to use the features of DOS proficiently will make your tasks on the computer more enjoyable and productive. □

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Peter Norton: On The State Of The PC

By Jeff Spurrier

PHOTO: ANN SUMMA

"Software Saint" Peter Norton believes that the IBM PC, though fast becoming obsolete technologically, will continue to be viable because of its huge user base.

When IBM debuted its personal computer in 1981, software designer/analyst Peter Norton says he was only marginally aware of the burgeoning microcomputer world.

"I was a mainframe snob," he recalls. "If the CPU wasn't the biggest available, then I wasn't happy. One day a friend of mine pointed to an ad for the (IBM) PC and said, 'If I buy a microcomputer, I'm going to get one of those.' So I bought one just for a lark. I started tinkering around with it and gained a certain amount of expertise."

Peter Norton's "tinkering" eventually led to a series of books on the IBM PC (including the 1983 classic *Inside The IBM PC*), a regular column in *PC* magazine, and a set of best-selling utility programs that many computer critics regard as "essential" for IBM PC users.

All in all it's not a bad track record for someone who thinks "the micro world starts with the PC and everything before it is pre-history."

When Peter Norton talks, the PC community listens — and has ever since early 1982, when he first started dropping by IBM PC user group meetings to hand out free tip sheets and hype his utility programs.

"Because [the IBM PC] was new, there wasn't much information out about it, and I had a lot of experience in computing," he says. "I felt myself to be in a big brother role because I understood a lot about the machine, but many people who were buying them didn't."

With experience in everything from scientific research for JPL's Voyager missions to Jupiter to designing large mainframe data programs, Norton would seem to be a true computer Renaissance man. Before he decided to go freelance with his software publishing company, Norton had worked as a programmer, designer, analyst and as a corporate "executive liaison" — an interface between the data processing technicians and the executives of a large company.

Ever since Norton went public with his *Norton Utilities*, he has assumed something of an interface role, either as a writer or as a programmer. And while he detests the term "user friendly," it's obviously a concept he believes in — and has made a success out of. *Inside The IBM PC* was a block-buster best-seller when it came out in 1983. And after three years (and constant updates) the *Norton Utilities* are still going strong and are expected to sell over $2.5 million in 1985.

"Typically, utility programs are [written] by programmers for programmers," he says. "They're hacker-oriented — great for technicians but not for civilians. So I put a better user interface with mine and made technical products relatively easy to use. That's basically what I did with my writing — make technical explanations easy to understand."

And throughout his writing career, Norton has always found himself with an audience. At one time he was contributing articles to four different (and competing) PC-oriented magazines. He even managed to get excerpts from *Inside The IBM PC* published in three of the four magazines.

"And nobody was outraged," he says, shaking his head in amazement. "Things were friendlier then. It was more [a spirit of] 'What can we do to

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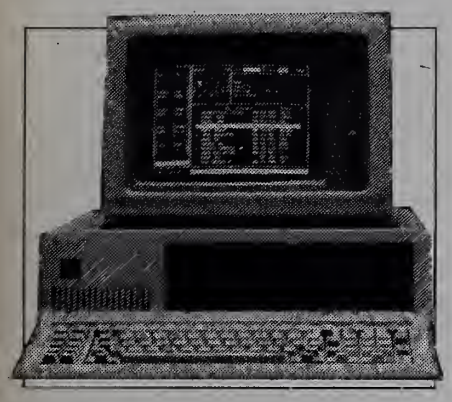

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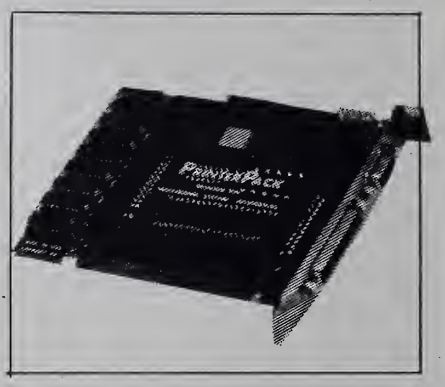

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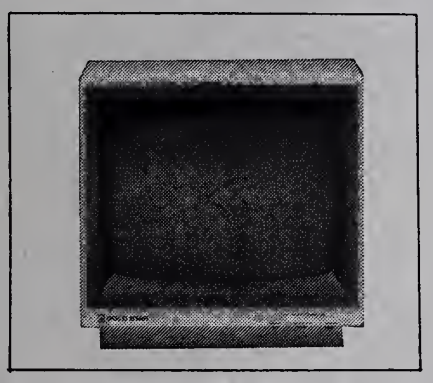

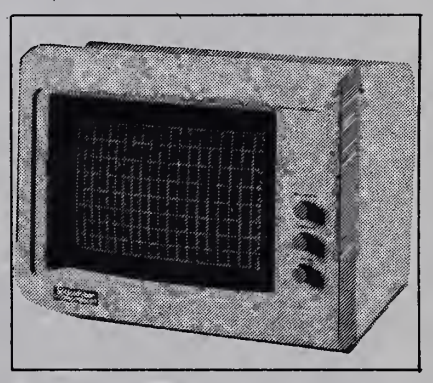

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help each other?'"

While things have gotten less friendly in publishing, they've also become less technical. The more popular the IBM PC has become, the less technical Norton finds he must be, both in his writing and his periodic updates of the *Utilities*. Early PC owners were often computer enthusiasts and were curious about the machine's inner workings and DOS. Today's owners may be just as enthusiastic about the machine, but only from the standpoint of knowing what it can do for them — not from any technical awareness or orientation.

And while the growth of the IBM user base has made users less technical, it has also ironically made enhanced, sophisticated — i.e. user friendly — interfaces more difficult to implement.

"From the current, pragmatic point of view, DOS is it, and everything else is nonsense," says Norton. "For better or worse, that's what people are using on PCs. None of the spiffier things like *Windows*, *GEM*, or *TopView* work really well. The prospect of other operating systems is just silly. You can talk about the wonderful interface of the Macintosh, but the truth of the matter is, the people who are getting things done today on PCs are sitting down and staring at 'A>.' When you think we've got millions of people using DOS on PCs, it's absurd to think we could rapidly migrate them into a more sophisticated climate."

Still, he adds, the eventual future of personal computing lies not in the linear command-oriented shells of DOS but in a Macintosh-like environment.

"We have to end up with something at least as good if not better than the Macintosh (operating system)," he admits. "But how we get there from here I don't know — not when we have literally millions of people and billions of dollars invested in DOS. I don't see DOS lasting forever, but I also don't see how we can leave what we've got and go into a bright new future."

One road that Norton is certain won't lead to that bright new future is *TopView*, which he labels "a piece of junk." *TopView* (and by extension *GEM* and *MS-Windows*) is a case of the cart being before the horse. The standard PC simply isn't equipped to handle such sophisticated environments.

"The design goals of the software are ahead of the machine in two fundamental ways," maintains Norton. "One: There ain't enough memory. Two: We're talking about an unprotected CPU trying to run a protected operating system. It's not really possible. The microprocessing engine inside the CPU is designed to do one thing at a time and has no protection against some rogue software tripping up the works. To run a multi-programming, multi-tasking operating system, you've got to be in a protected environment that can put boundaries around the programs. And the microprocessor in the PC simply doesn't allow for that. The 286, the engine inside the AT, does have that traffic cop in there, but unfortunately there are millions of PCs out there already.

"The smart visionary people are saying we've got to get out of the primitive environment and into something better. These are the ones who set out to create a *GEM* or a *Windows*. But it's like trying to land a 747 in a cow pasture. A barnstorming bi-plane can land there, but a 747 can't. We've got to build the airports first."

The fantastic success of the PC has paradoxically created a "roadblock to progress," Norton feels. With nearly four million users out there, the next mainstream version of the PC will of necessity be a "timid evolutionary step." While the PC is obviously outdated when compared to the AT, Norton hesitates to label it "obsolete."

"Is a Chevy Chevette obsolete?" he counters. "Yes, from one point of view, but there are millions of people driving them. In terms of what's new, yeah, the PC is obsolete and has been since the AT came out. But there are millions of them out there and it's still being sold. It's not a dying machine that's being left behind in the way the CP/M machines are. The PC's time has not passed. But it *is* an obstacle to progress, because there are so many of them. It's been so successful."

And while Peter Norton describes himself a "a lone wolf," it's obvious he has a healthy respect for corporate success on a mass scale. For example, Microsoft's *de facto* monopoly of DOS doesn't bother him in the slightest. While some clone makers may be hurt in the process, on a large *pragmatic* level, the company's domination is a benefit.

"Do you like it since they broke up the phone company?" he asks with a grin. "It's one thing to look at things from a theoretical viewpoint and another from practical realities. In many cases it's to everyone's practical advantage to have working monopolies — uniform standards. DOS dominates and, from the point of view of competition, that's bad, but from the point of view of giving everyone a common ground, a framework, it's a heck of a benefit."

Of course, he adds, a lot depends on how fairly Microsoft treats its various customers. "If they play fair, then the clone makers get their [versions of] DOS briskly and don't get overcharged wildly," he says. "But for many PC users it's an irrelevant issue. Who cares if it costs Tandy an arm and a leg? Who cares if some obscure Korean CPU maker gets left in the dust because Microsoft charges them $5 million for DOS and delivers it two years late? Who cares?"

Clone makers in general get little respect from Norton, especially those that promise more than they deliver such as, he says, the Data General One.

"I liked the DG One when I had a prototype, and they said the production model would be a lot better," he says. "When I got the production model I realized I'd been deceived. My comment about the DG One is that it's the perfect computer for the blind or anyone that wants to be. Its only flaw is that it doesn't have Braille output."

Another big ho-hum item for him is Artificial Intelligence, this year's trendy topic. Non-trivial AI is still years away, he maintains, and he wonders just what kind of AI micros will ever be able to support. AI itself is something that even its researchers can't define.

"Some friends up at Stanford Research — which is a hotbed of AI — gave me an interesting perspective on it," he says. "They said while you're doing work on something, it's AI, but as soon as you get it working, it's just an application. What you think of as AI is something you haven't done yet. It's like the quest for the Holy Grail. Or a unicorn — and if you have the animal in your corral it *can't* be a unicorn. The unicorn is the beast you're seeking, the goal that's out of your reach."

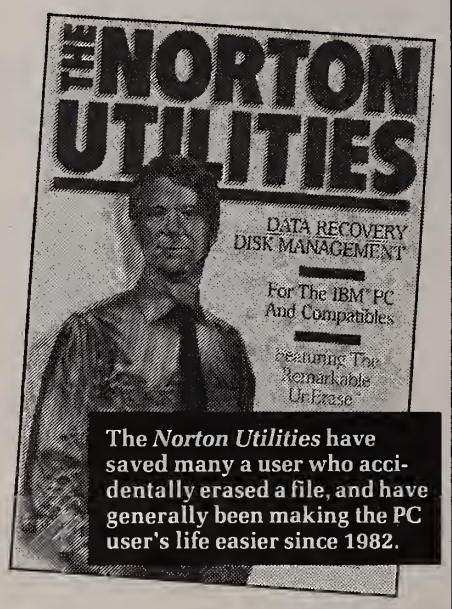
What is within reach, he says, is a viable livelihood for small kitchen table software designers — as long as they target their market. A lot of software opportunities have vanished with the maturation of the industry, he concedes, but there are still possibilities.

"The big stuff belongs to the big guys, and there aren't many middle-sized opportunities, but there are still lots and lots of little opportunities — they continue for the kitchen table vendor," Norton says. "Ashton-Tate is not going to fire up their programming team to write some nifty little set-up program for the H-P LaserJet, but at least a dozen little kitchen table software companies saw that the LaserJet was popular and needed utilities. I use one myself. There are always little opportunities, little nooks and crannies, where there's a need, but it's not big enough to support the big guys with their budget and marketing and all that."

Norton should know. His *Utilities* are about to be joined by his company's second software product, the *Norton Editor*, a programmer's editor written by a friend of his. Like the *Utilities*, the *Editor* will be offered at a moderate price. □

The Norton Utilities

While Peter Norton first jumped into the public consciousness with his best-selling book *Inside The IBM PC*, it was his utilities programs — the *Norton Utilities* — that earned him the title of "the IBM software saint."



The *Norton Utilities* have saved many a user who accidentally erased a file, and have generally been making the PC user's life easier since 1982.

The *Norton Utilities* do a number of data and file management chores, arcane bits of memory manipulation which, for many casual users, represent a godsend gift of ultimate organization and byte-by-byte control.

With the *Norton Utilities*, IBM PC (and compatible) users can unerase accidentally wiped out files, sort directories in a variety of different ways, test disks for bad sectors, find files via an assortment of word clues, print files without using a word processor, mark files "read only," search for key words or data anywhere within a disk, mass tag and re-name or zap files, keep track of time spent on the computer, and list all directories, file sizes, and room left.

The *Norton Utilities* do all this easily, efficiently, and quickly, requiring a minimum of computer expertise on the part of the user. The house cleaning tasks are the sort every computer user (especially those with hard disks) must eventually face. And consequently such programs, say some, belong in the operating system of the machine.

"There's always the question of how much stuff should be included in the operating system," admits Norton. "From one point of view a spreadsheet, word processor and a data base belong there. From another point of view an operating system should be as basic a core as possible — everything else should be a purchased add-on. Buy it if you need it. With my genre of stuff — utilities —it's always a judgment call on how much should be an add-on and how much belongs with the operating system. Somewhere the line gets drawn. What I did was see where the line was and then looked for what people needed in addition. If they re-draw the line somewhere else I'll look at that and see what additional stuff should be added to DOS. That's sort of my role in life, to provide the extra stuff they decided not to include with DOS. I just saw a need and filled it." — *Jeff Spurrier*

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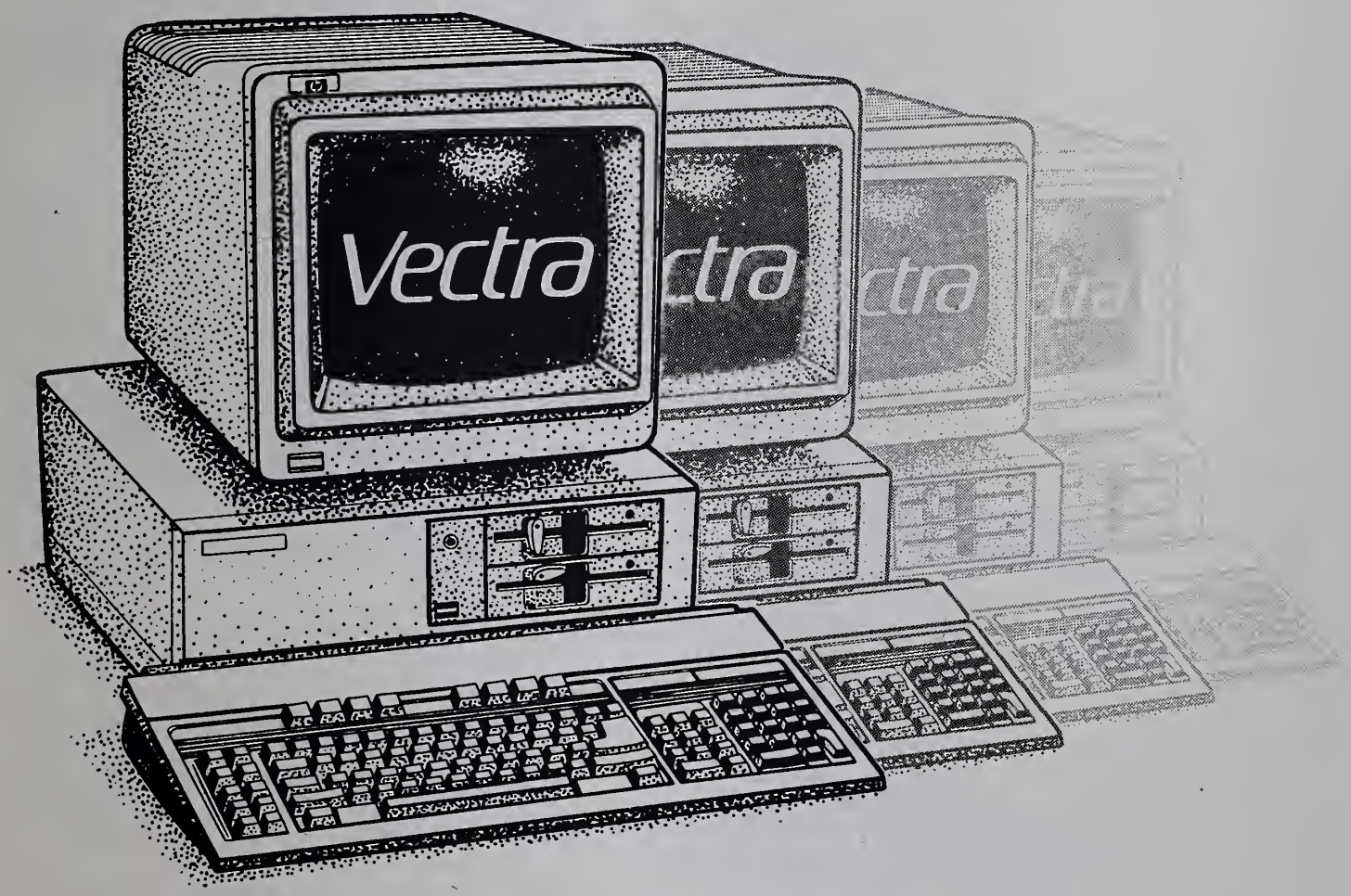

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Kwik-Find Simplifies The IBM Interface

By Mary Eisenhart

The IBM PC is a machine with many excellent qualities. However, not even its most besotted admirer will tell you that ease of use, particularly at entry level, is one of them. No one knows how many PCs sit unused in the offices of America, untouched by workers who threw in the towel after being confronted with mystifying prompts and intimidating piles of documentation. Most popular software for the machine — e.g. the *dBases*, *WordStar* and *Lotus 1-2-3* — while offering impressive capabilities to the stouthearted souls who survive the arduous process of learning to use them, consist of such a bewildering array of commands and options that many would-be users give up the attempt early on.

To be sure, the new user can take classes to learn how to use the machine and software, but this is a time-consuming process. What often happens instead is that the prospective consumer, faced by the prospect of making a hefty investment in the computer itself, then having to spend several hundred more dollars for a software package that's hard to learn, will end up buying nothing, or being seriously dissatisfied with his purchase.

When Tariq Hamid and David Lontz of SOFTransit were looking for likely niches in the software market, they considered this situation and decided to do something about it. "The end user does not have time to do his work plus learn intricate software," says Hamid. "He has to sacrifice one for the other. When we started working with the software idea, we made sure we put out the kind of software which could be used by every person who wants to learn how to compute and who wants to run his business."

In planning their software, Hamid and Lontz considered three attributes of paramount importance: the package had to be simple to use, it had to be flexible enough to be truly useful, and it had to be priced low enough that people wouldn't be afraid to buy it.

The result of their endeavors is *Kwik-Find 3-In-1*, a versatile program that combines data retrieval, full screen editor, and word processing functions, all in an easy-to-learn package that costs $99.95. *Kwik-Find* has been designed to be useful both to the novice user who's just learning how to use the computer and to the experienced user who's looking for an easier way to use existing files and software.

Kwik-Find's most appealing feature, at least for those who have ever tried to remember just what they called that file they created last month, is its data retrieval system. If, for instance, you're looking for a piece of information relating to your employee Joe Smith, simply key in "Joe Smith" and *Kwik-Find* will present you with a list of all the data files in which Joe Smith appears. Then, using the same simple method, you can seek more specific information within the individual files.

Kwik-Find can also access ASCII files created in *Lotus 1-2-3*, *dBase*, or *WordStar*, so that if you'd like to work on these files, update information, revise formats, etc., you can do so in the simple *Kwik-Find* environment instead of struggling through documentation wondering just how you're going to do it. *Kwik-Find*'s full screen editor allows you to revise, add, delete or change data as desired.

Kwik-Find also has a word processing function which lets you create documents as needed, including forms, boilerplates, invoices, statements and reports. None of its procedures requires a familiarity with complex commands. The program also includes an autodialer for one-keystroke dialing of any phone number in your data base.

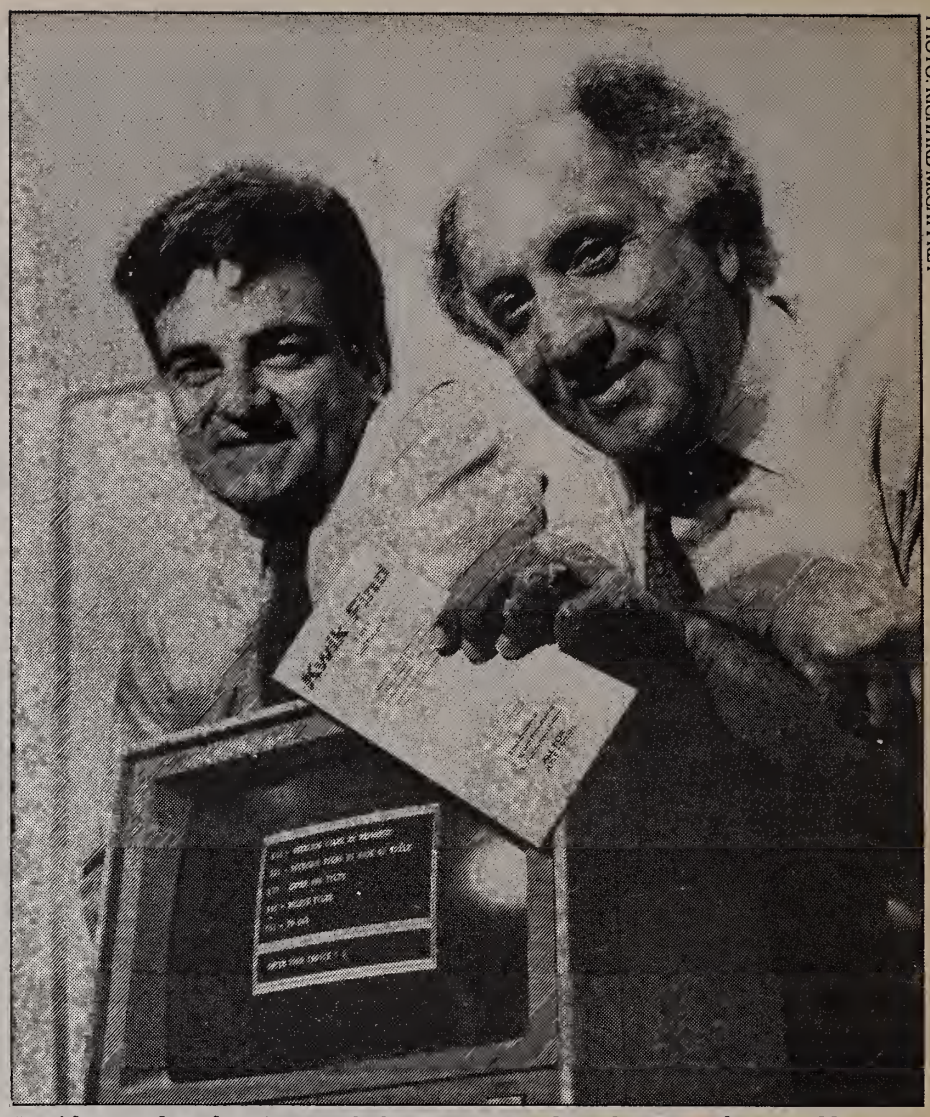
Learning *Kwik-Find*'s procedures takes about 15 minutes, and Hamid and Lontz see several areas in which it might be a godsend. For instance, a manager who needed a report but was unfamiliar with computers would no longer be at the mercy of his firm's data processing/MIS department — he could simply access the information and create the report himself. Likewise, salesmen in the field with no computer expertise could easily use *Kwik-Find* to transmit and receive data over the phone lines, causing much more efficient access to information throughout the company. Numerous major corporations have already expressed interest in the product.

However, Hamid and Lontz also perceive *Kwik-Find* as a product that will actually drive sales of IBM computers to prospective users who value the machine's power and versatility but are intimidated by its complexities. Initial indications are that IBM might agree — *Kwik-Find 3-In-1*'s parent product, a vertical market package of a similar nature specifically for the personnel/human resources industry, is the only product in that field recommended by the IBM Product Center in San Francisco, according to Hamid and Lontz. Adds Lontz: "Looking at it as a product that you would sell with a computer, it would be a tremendously powerful software tool allowing the user to access and create data files so much more easily. This will allow them easy access to anything they want, as a front door, if you will. For those people that are already using Lotus or *dBase* or *WordStar*, this enhances it."

Kwik-Find's price, $99.95, is also user-friendly. Hamid and Lontz believe that by pricing software at a low and equitable level, they will induce more prospective users to actually pay for the package, thereby avoiding the tremendous piracy problems that companies like Lotus face. They've also developed an ingenious solution to the problem of copy protection, designed to let the legitimate user transfer the program to a hard disk and still have a backup while preventing the mass distribution of copies to his friends, cousins and user group cohorts. Says Lontz, "We'd allow you to copy it twice. You could copy it more than that; however, the additional copies would work for maybe a period of 30 days. So you could merrily enter all your data on a copy program, and after 30 days a little message would come onscreen and say, 'I'm sorry, you can't use this program any further. For information on continued use, please contact us.' And we'd say, 'Sure you can continue to use it — just send us $99.95 and we'll tell you how to unlock it.'"

Both men stress that if, by some catastrophic chance, the legitimate registered owner of the software needed to make a third copy (if, for instance, his machine's hard disk had crashed twice), SOFTransit will cheerfully supply the necessary information free of charge. In any case, this protection scheme offers an unusual opportunity for would-be buyers to thoroughly try out the software and become fully acquainted with it before buying.

Both Lontz and Hamid believe that their product addresses what they perceive as crucial needs in today's computer marketplace: simplicity, flexibility and reasonable price. They plan to expand on *Kwik-Find 3-In-1* with an entire family of related software, some for general use, some for vertical markets — all combining the same ease of use and low pricing. In doing so, they may become a major force in revolutionizing the PC market. (SOFTransit, 3030 Bridgeway, Sausalito, CA 94965, (415) 332-7344.) □



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David Lontz (l) and Tariq Hamid of SOFTransit, making the IBM and compatible computer truly user-friendly with Kwik-Find.

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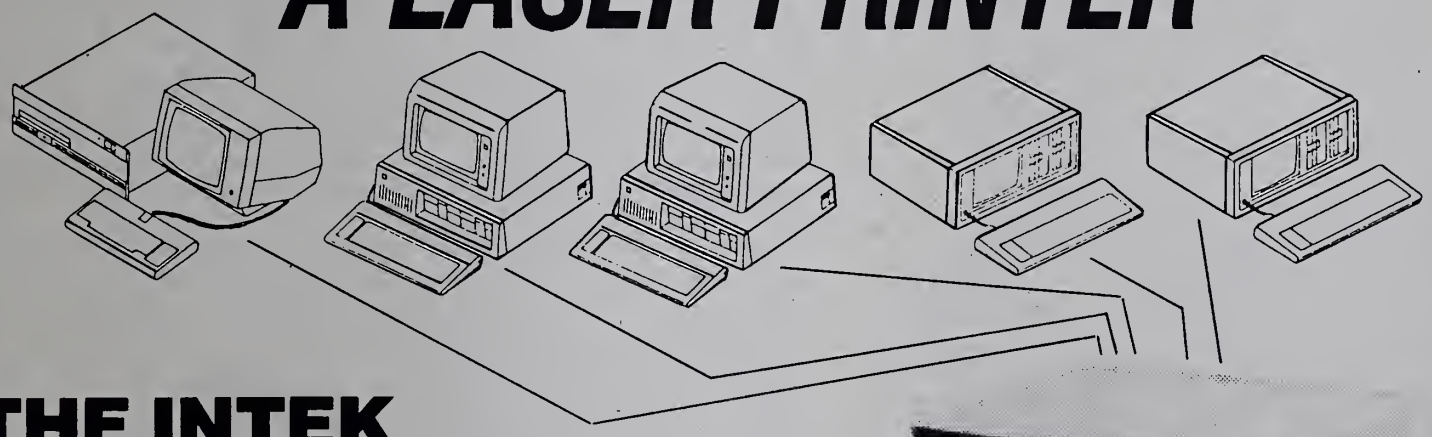

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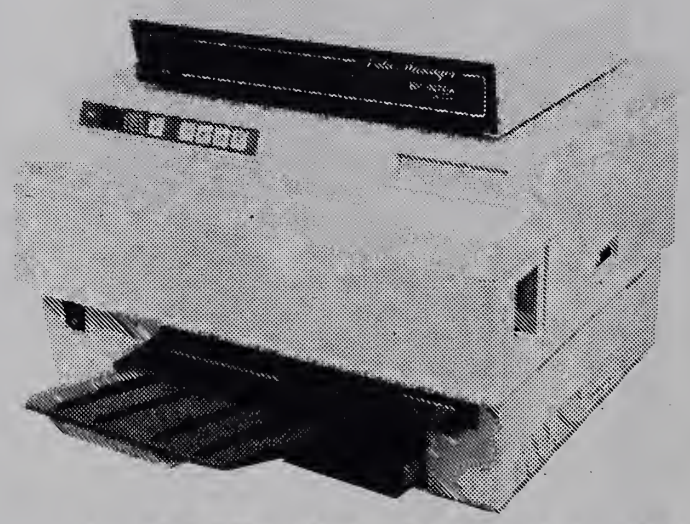

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Tax Breaks For The Computer Owner

By Lynn Shaw

There is an important rule of thumb to remember about taxes: when you spend money to produce taxable income, you are eligible for tax deductions and tax credits. Uncle Sam will do all he can to help increase taxable income. His strategy works. Taxpayers who know how to take advantage of tax benefits increase their income.

Susan Meyers, a Mill Valley author of children's stories, is a good example. Conversations with other writers convinced her that writing on a computer would be more creative and productive. There were also important tax considerations. She would get an Investment Tax Credit and expense the cost of her system.

She installed her Morrow system, took the $2224 tax write-off, and did what came naturally. She wrote articles for children about data processing and became West Coast editor of *Enter*, a kid's computer magazine. What she hadn't counted on was a new career.

PHOTO: LYNN SHAW

Susan Meyers, an author of children's stories, was able to use her computer in business and write it off her taxes.

She answered an ad in the San Rafael *Independent-Journal* for a technical writer. When she told Brøderbund Software her background, they decided if she could explain software to kids, she would make a great tech writer.

For Susan, there was no question about the business use of her equipment. For the rest of us, it may not be so clear-cut. Tax benefits are a powerful incentive for the purchase of a home computer system. Stories of friends who wrote off an $8,000 computer system as a business expense make the mouth water.

If you're finally ready to invest in a system with the expectation that you can write it all off as a tax deduction, you'd better take another look. You may be out of luck.

The Tax Reform Act of 1984 has severely limited the tax savings for home use of a computer. Unless the computer is necessary for your work and required by your employer, you cannot deduct it as an employee business expense if you placed the system in service after June 19, 1984.

If the computer is necessary for your work, you can only claim tax savings for the percentage of its use that's part of your business, and that has to be verified. There are stringent record-keeping requirements for partial business use of a home computer. You have to log your actual usage, and your tax preparer cannot sign your return unless you have adequate records.

The Investment Tax Credit and accelerated depreciation benefits are also limited by the percentage of business use of your system. You'll need to talk to your tax preparer to calculate the actual tax advantage to you.

However, there are still important tax benefits to ownership of a home computer, providing you use it to produce taxable income.

You can deduct software that helps you prepare your taxes or track your investments. Software you buy with your computer equipment is treated for credit and depreciation purposes as part of your equipment. Interest payments on your system can be deducted, as well as the sales tax. You may be able to deduct an office-in-home, as well as insurance, electricity, paper and supplies, repairs, and attachments. It depends on your business use and employment status.

If you work for someone else but use your computer in a genuine sideline business, you are eligible for the tax break of the self-employed. Use your system to generate tax savings. Be imaginative. Think of ways your computer can earn money for you. Remember, it is what you do with your computer to earn taxable income that makes it a business expense.

Tax advantages — rapid depreciation, investment tax credit, bonus first-year write-off, home office deduction — affect the bottom line on a 1040, but the greatest advantage of a home computer is the business opportunity it offers.

As Susan Meyers likes to say, "All this happened because I finally took my friends' advice and got a computer." □

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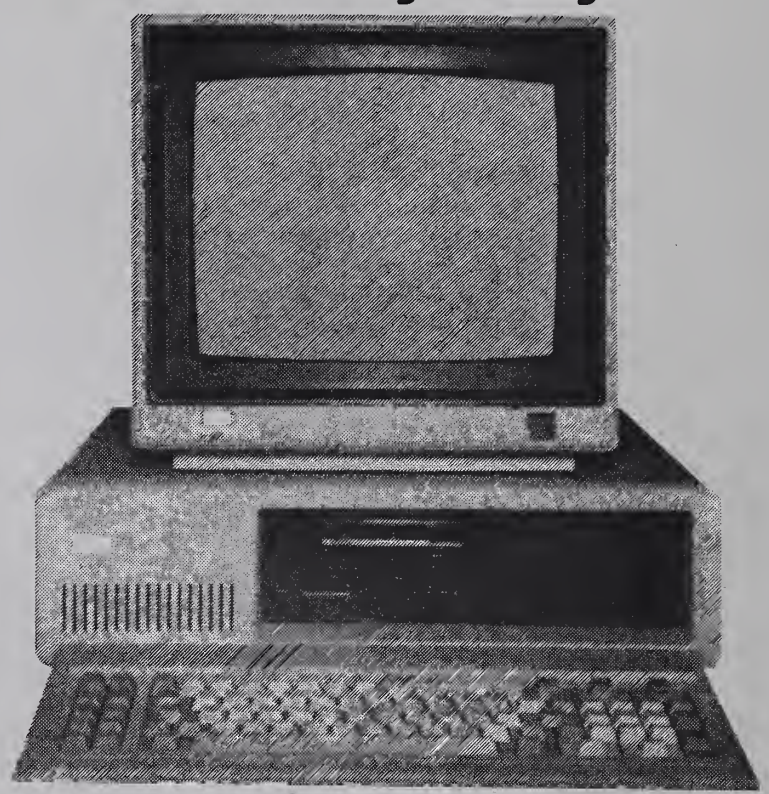

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Ten Commandments of Telecommunications

By Brock N. Meeks

A micro, a modem, and a motive. During the coming months thousands of new modem users will experience the "gee whiz" motive that will lead them "onto the boards." (This makes retail computer outlets rejoice, although your local sysop is likely to begin a two-month lament.)

After that first "gee whiz" phase, however, new modem users find out what the "old-timers" already know: telecommunication is an art.

Using a modem is easy. Boot your software, dial a number and bingo, you're online. Developing telecommunications skills, however, takes practice. Ignore some common-sense rules of online etiquette, and you are quickly branded a modem illiterate.

In an effort to help new modem owners (during those "rookie" online sessions), and modem illiterates (wandering bewildered through the nation's bulletin boards), I've developed the Ten Commandments for Telecommunications.

Enjoy.

1. Know Thy Software

Although spaceship Earth didn't come with an instruction manual, your communications software did: read it.

Learn the capabilities of your software. Sounds ridiculous to mention it, but I am constantly amazed by people that neglect to use the full power of their software. Most modem owners fall into the typical 80/20 pattern. That's where 80% of the people using a given program only learn 20% of its capability.

Know your software's commands. You don't want to fumble with a manual when online. Commands you use regularly should be committed to grey-matter, random access memory—your brain.

2. Thou Shalt Download Help Files

Each system contains help files. Get into the habit of downloading (see Commandment #1) these help files and printing them out. With these printing instructions you can often navigate a system in the "expert" mode. (Which usually means setting up the system to provide you with brief versions of menus and options.)

Help files in hard copy will save you time online. And if you're pushing a 300 baud engine, I can guarantee you will save yourself some frustration.

3. Thou Shalt Remember Context

There are bulletin boards for poets, priests, peacemakers, and plumbers—know the type of system you are using. Each BBS has a regular clientele (just like the local pub), and you may be sorely disappointed by posting a "kittens for sale" message on a board that caters to assembly language programmers (though programmers do occasionally use kittens for the "kitten on the keyboard" debugging test).

Tear out this page and stick it in a friend's stocking, or use it to wrap up that new modem you're giving as a present.

How do you find the context of a particular system? Ask around. Many general interest boards carry files that explain the warp and woof of different systems. Read articles on telecommunications, make notes of systems that interest you, and keep them available.

4. Remember Thou Thy Community

Because micro communications are asynchronous (one-way) in nature, it is easy to forget that there are human beings "out there" reading your comments. There are people behind the pixels.

Your messages are a direct extension of yourself. This may be hard to remember during "all-nighter" stints at the keyboard, but keep in mind that most people will know you only by what they read. Show disregard for your online community, and your life online will likely be short.

5. Defile Not Thy Cursor

Often situations will arise when your "button is pushed." It may be easy to rail at someone from the comfort of your computer room launching pad, but a little discretion is advised.

When you are tempted to kick the other person's dogma, relax. Fight the urge to commit intellectual suicide. Download the offending message and come back to it later. A cooling off period works wonders for your common sense.

6. Be Thou Brief

Brevity is a virtue. Covering several systems takes a tremendous amount of time. Spare others your ramblings. When adding a comment, never say in ten words what you can say in five. Being succinct with your comments will assure your message gets read, instead of just scanned.

Being brief also teaches you to pack the greatest amount of punch into the smallest number of words.

7. Prepare Thyself For Fire

When participating on a BBS there is a certain responsibility that comes with contributing. The biggest responsibility is taking credit for message traffic you generate.

Too often people leave messages they would never say in a face-to-face conversation. As a result, messages entered into a system with little or no thought often draw hostile fire from the other members of the board.

Take responsibility for your messages, before you write them. To save yourself a lot of explaining, it is better to spend a little more time formulating initial messages or responses. The time spent here will reap rewards, such as lively discussions and stimulating feedback from other users. It's a lot easier to "defend" a comment when you're on familiar ground.

8. Compile Thy Resources

This commandment will help you out of the jam I warned you about in Commandment #7. You can say something in person, stretching the facts just a bit, knowing that the comment is buried in the past, never to return (unlike last night's anchovy pizza). On a BBS, however, your comments may hang around for a long time.

When you state a point of view, or insert a choice fact, pump in a reference or quote a known source. This keeps you from being the object of target practice, and it lends credence to your point of view.

9. Thou Shalt Not Assume Understanding

A few sarcastic lines thrown across a plate of nachos and a dark beer can be entertaining. Take those same sarcastic remarks, move them over a phone line at 1200 baud, and they can do more damage than a chainsaw in a cheese factory. Without voice inflections a "funny" remark is easily misunderstood. Subtle humor gets lost in the phosphor.

You can take steps to assure that people realize you are "just joking." This is accomplished by using ASCII icons. There are a couple of popular icons you can use.

For example, the "smiley face" looks like this: :-)

Then there is a symbol used in Southern California: it looks like this: < * >

If that sounds stupid, tough. Jump off a cliff. < * >

See how it works?

10. Thou Shalt Have Fun

Above all, enjoy. Don't take your online peers too seriously: the whole environment should be one of cooperation, not competition. Serious debates, with heated messages flying back and forth, are great but it's not like you're debating in front of the U.N.

If someone "attacks" your point of view, don't take it personally. Remember that little tidbit of online advice and you'll save yourself an ulcer or two.

And So It Goes

There you have it. A guideline of sorts, etched, not in stone, but in phosphor. These "commandments" are not intended as an edict for online behavior: they are an attempt to give you a framework to work with. You will build your own skills.

So tear out this page and stick it in a friend's stocking, or use it to wrap up that new modem you're giving as a present.

Pax, gentle readers. I'll see you online. □

Brock Meeks is a San Diego based freelance writer. He has never parted the Red Sea, but he has driven through several large puddles in his '72 Volvo.

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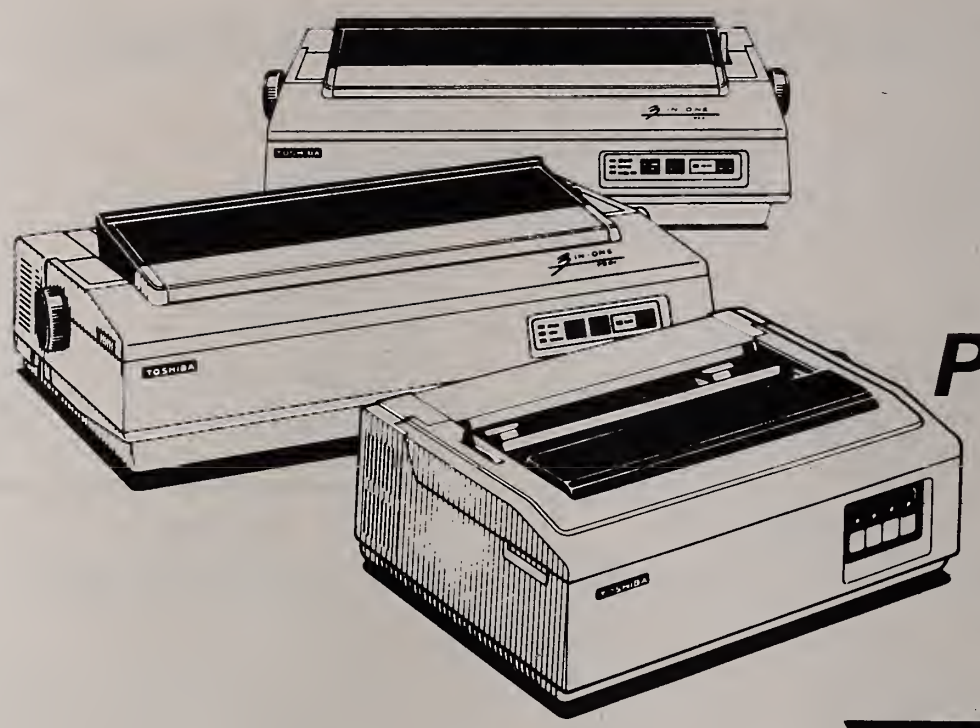

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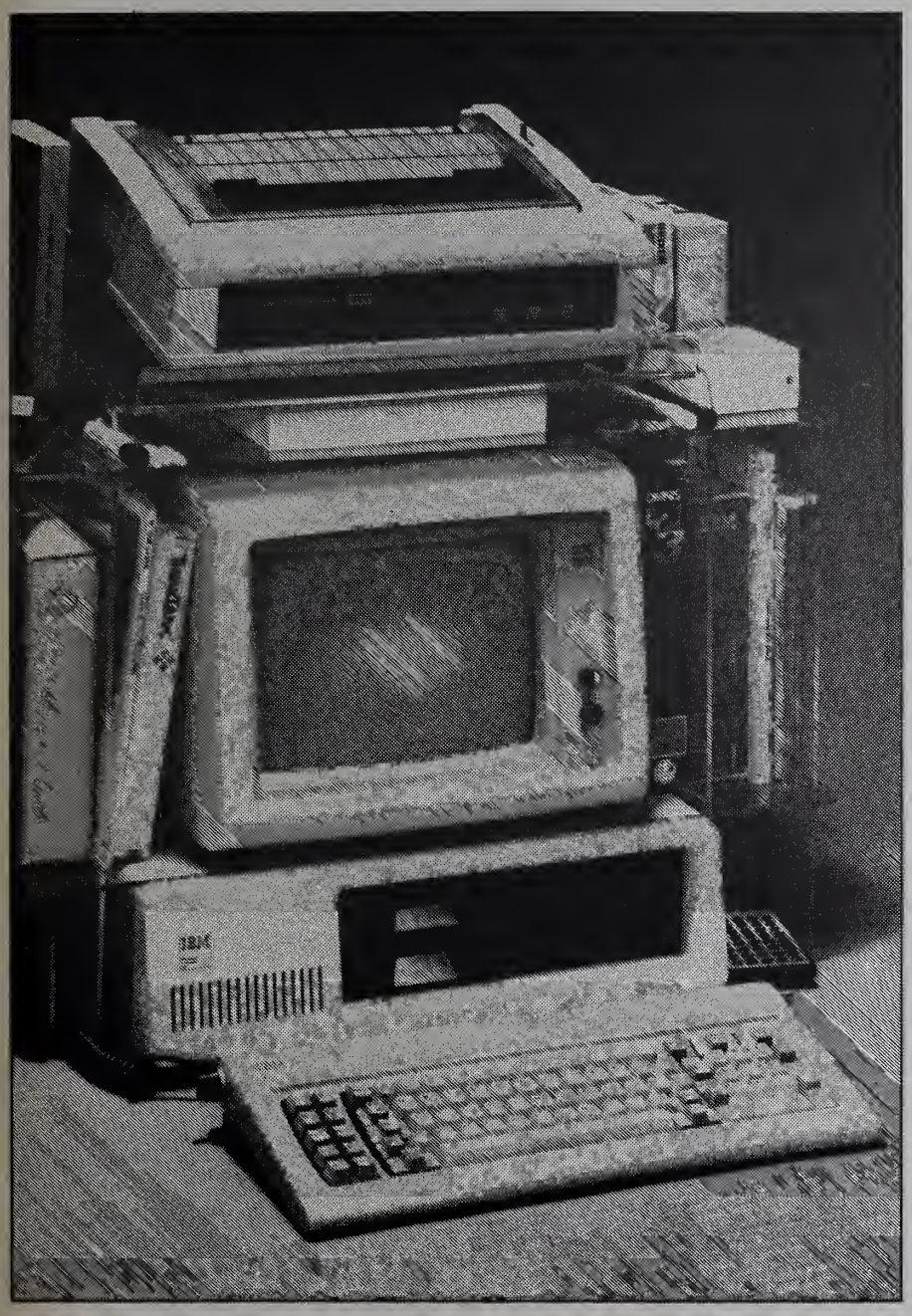

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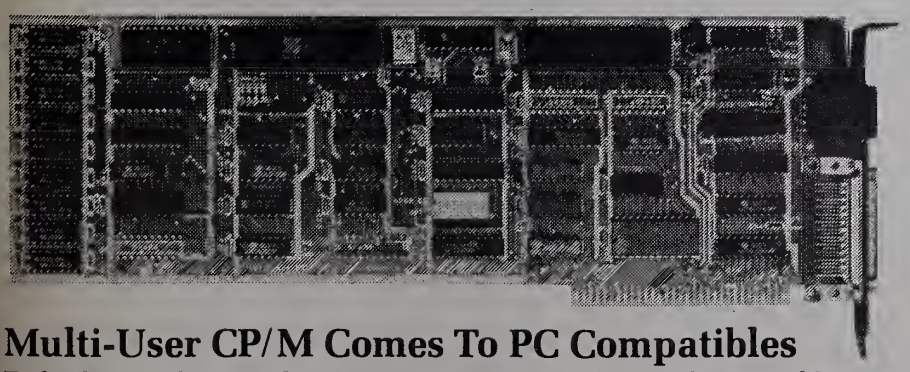

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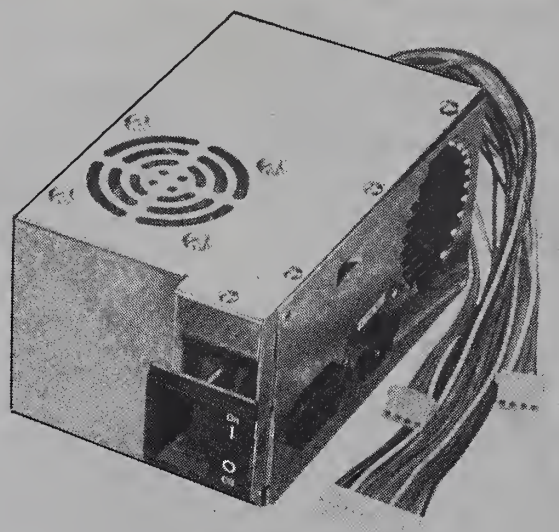

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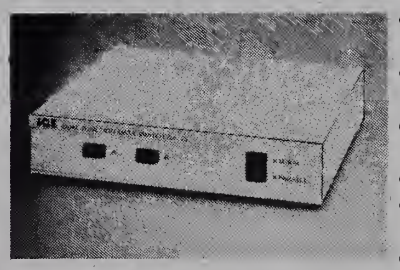

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DATA IMPRESSIONS

By Bill Amatneek

Recently I've been able to look at or handle a number of data base products. Having talked to about 240 people at the 3rd PC Faire in San Francisco, I find that their interests and the products I have looked at seem to coincide. What follows is not so much a review of any of these products, but some immediate impressions of them.

RBASE 5000

Without doubt, most of the people who approached me at the Marin *dBase* Users' Group booth with non-*dBase* questions wanted to know what I thought of *RBASE 5000*, the relational database management system from Microrim. I recently saw a demonstration of *RBASE 5000*, sponsored by 800-Software and Microrim, and the product's performance was quite impressive.

If you bought every data base management system that came highly recommended, you would be thousands of dollars in the hole by now. Never buy software without trying it yourself.

The high point of the demonstration was the creation of a menu-driven program to add, edit, delete and report data from a flat file (a file not linked to a subsidiary, or lookup file). The audience was mostly *dBase* dogs such as myself who are familiar with the amount of work entailed in producing this kind of program in *dBase*, complete with data-input range checking. It's the type of program that would take two to five hours of *dBase* coding to produce. Although I didn't put my watch to it, I would say that at the outside the demonstrator took, say, five minutes to produce the entire program, using *RBASE 5000*'s menu-driven program generator. An astonished gasp went through the crowd as he completed the demo.

If you don't own a database management system and are shopping for one, or if you are unhappy with your present DBMS, you should look into *RBASE 5000*. As ever, test drive software before investing in it, unless wasted money is no object. There is an *RBASE 5000* demo disk available. I would say more about this product, but I have not yet received the review copy that Microrim promised.

This brings up a factor that computer magazine reviewers often overlook in recommending software. Most reviewers receive multi-hundred dollar products from manufacturers free, sometimes without asking for them, and there is a tendency to forget that what is free for a reviewer costs real people a lotta bucks.

If you bought every data base management system that came highly recommended by a certain data base magazine, you would be thousands of dollars in the hole by now; moreover, your data would be distributed wildly among incompatible files, retrievable only by the management system which created them.

So please take my impressions, and those of others, with a large grain of salt. A favorable review does not mean that the product is bugless or that the company offers good support (most do not have a toll free number for user support, and there oughta be a law about that), or that there will be a neighborhood user group to support you when you need it. Check all this out beforehand as much as possible, and never buy software without trying it yourself; watching other people demo it is probably not enough.

dBase III Compilers

Far and away the most common question I was asked during the Faire was about *dBase III* compilers. There are two on the market right now that I am aware of: *Clipper* ($695) from Nantucket, in Culver City, and *dBIII Compiler* ($750) from WordTech Systems in Orinda, California.

First, a word about compilers and what they (hopefully) do. Programming languages are divided into two groups: Interpreted Languages and Compiled Languages.

A program is a collection of statements which instruct the computer on what to do. When an interpreted program is run, the computer reads the first command and translates or interprets it from its English-like form to a form the computer can deal with, and then executes it. After it has executed the first sentence, the computer moves to the second sentence, reads it, interprets it, executes it and so on. *dBase II* and *III* are interpreted languages.

A compiled language is also written in English-like sentences. But before this kind of program can be executed, the *entire program* must be translated or compiled from its English-like sentences to computer-understandable code. Each compilation takes time, and changing one line of original code necessitates recompiling the whole shootin' match; however, the compiled program which results will probably run faster, can be executed at the system prompt without the user having to own the original software that generated the interpreted code (like *dBase*), and, perhaps more importantly, is user-tamper-proof — compiled code looks like Egyptian hieroglyphs, only less user-friendly. This tamper-proof factor is important to programmers: the hot-shot kid in the mailroom cannot tamper with your compiled code — he can trash it, of course, but probably not successfully tamper with it. And the inscrutability of compiled code protects programmers from their own worst fears: that some enterprising corporate type will substitute some other firm's name for *his* firm's name on all the input screens, and then re-sell the program.

"C" is an example of a compiled language, although interpreters are available for it. Other languages started out their lives as either interpreted or compiled and crossed over with add-on compilers and interpreters, respectively.

Compilers are not new; they have been around for some time and have established *de facto* standards for compiler performance. One standard might be this: a compiler should compile 100% of the commands of the interpreted programming language for which it is developed; barring syntax or logic errors, if the program runs perfectly in the interpreted mode, it should also run perfectly in its compiled version.

Compilers do not, or should not ask that you re-learn how to write code to fit the compiler, i.e., that you work around the compiler's idiosyncracies and inadequacies. It's the other way around: a compiler should compile correctly written code, or it is not a good compiler.

Both Clipper and dBIII Compiler seem to be unfinished products. I look forward to improved products from both these companies and to a reasonably priced compiler from Ashton-Tate. Then we'd get some user-friendly documentation.

And finally, there is the standard for software in the '80s: a program should self-steer, self-explain, and auto-pilot itself, complete with on-screen documentation written in plain English.

Reviewers often write what are called benchmark programs to test execution speed of software such as compilers. Usually these involve timing the program as it is put through tough paces inside loops that are reiterated hundreds or thousands of times: a thousand reads, a thousand writes, a thousand appends, and so on. My testing program for these compilers is not so complex; I took a plain vanilla *dBase III* program to add, edit, delete and report on data in two linked files which utilized all five *dBase III* field types: Character, Numeric, Date, Logical and

Bill Amatneek heads Data Base Associates, a Mill Valley consulting and training firm. He can be reached at 415/388-8024.

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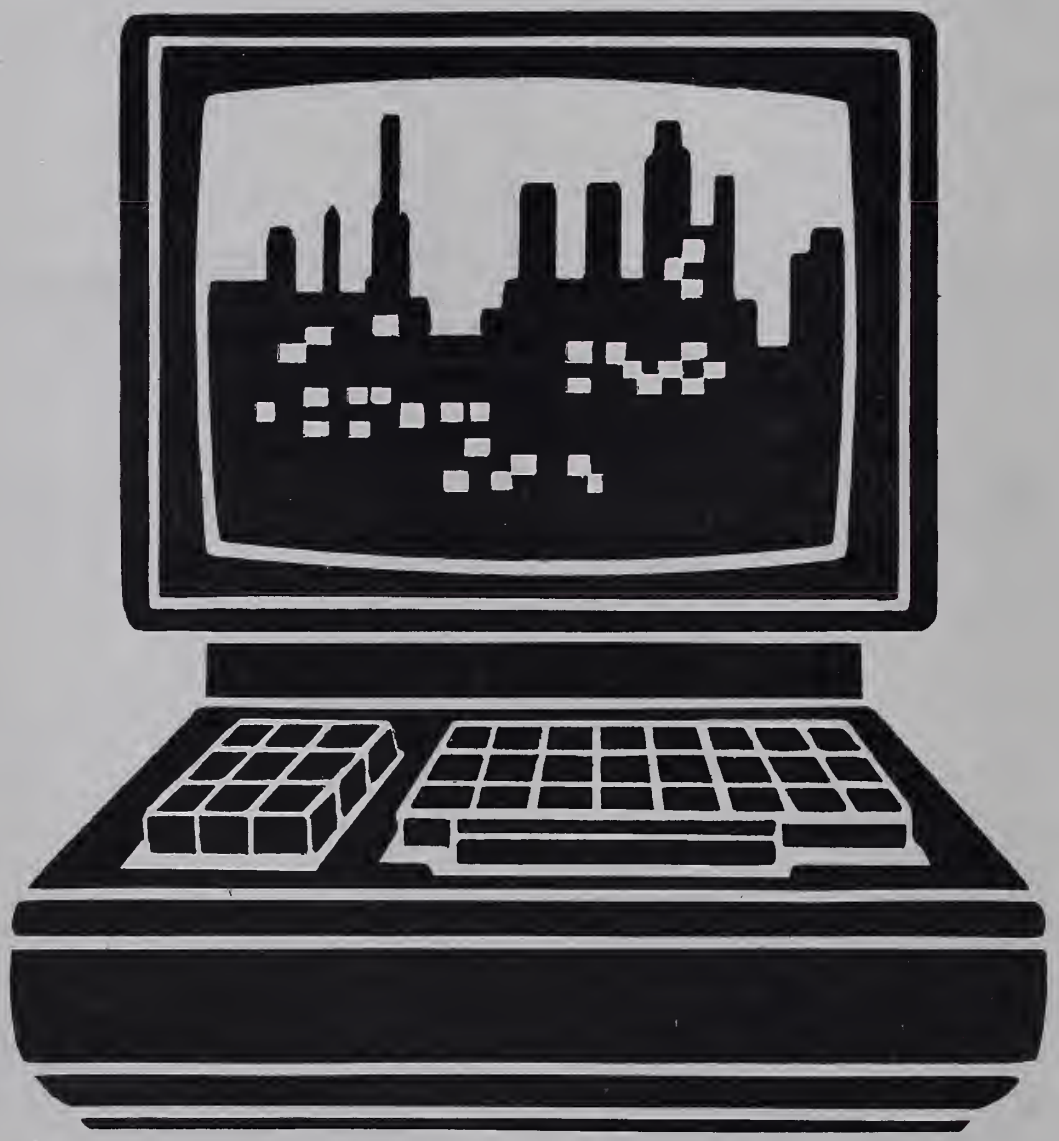

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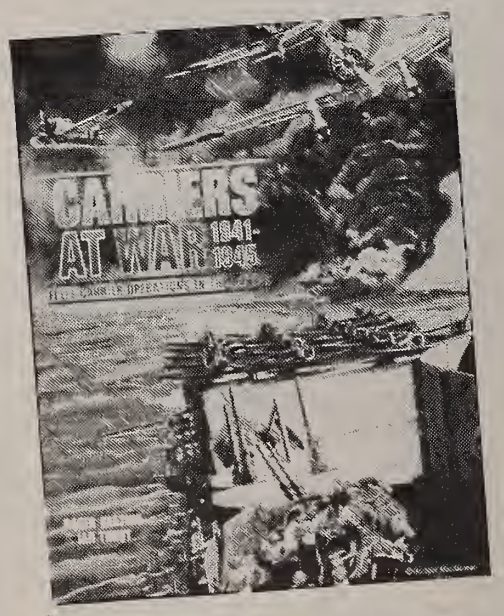

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Memo. It is a very basic *dBase* program, and one that I teach to my beginning programming students.

But the inclusion of the fifth field, the Memo field, caused a problem for both these compilers. Neither, as of this moment, will handle the Memo field. And I think that's not so great. The memo field has a legitimate use in *dBase III* and, although access to it from inside a program is clumsy, it can be done. (You must use an **@ . . .GET(memofieldname)** from within a format file only, and then **APPEND, CHANGE, EDIT, OR INSERT.** The user must be instructed to press **(CTRL)(PgDn)** to get into the Memo field, and to press **(CTRL)(End)** twice to exit the field.)

In handling only 80% of the available fields in *dBase III*, both these products have failed to hit the mark for me. Once I rewrote the programs and deleted Memo field references from the program files, and Memo fields from the data bases, life went a bit easier for the *dBIII Compiler*. But I don't feel that the absence of Memo field handling capabilities makes these products 100% *dBase III* compilers.

Of these two products, *dBIII Compiler* was the easiest to get going, although it had an error in the **READ.ME** documentation regarding the invoking of the linker. It did not appear to accept a default linker designation — you've got to call the linker by name. And you must also designate the drive that the program to be linked resides on. I believe the correct invoking sentence is: **DB3L -LA:DB3PC -OB -DB B:(filename).**

In any event, both these programs had errors in documentation or software that will necessitate multiple phone calls to their tech support teams to get them up and running. Neither of their phone numbers is an "800" number.

When I called Nantucket and mentioned to the *Clipper* support person that theirs was the worst documentation I had ever read, he laughed and said: "Someone else told me that not five minutes ago." Unfortunately, the laugh is on *Clipper*. Their documentation is unacceptably unclear. *Clipper* produced six error messages while attempting to compile my code and refused to link it subsequently. I felt the error messages were too terse: **"ASSIGNMENT error"** — whatever that means, in response to a **REPORT FORM** with an embedded **TO PRINT** macro. I guess they'd like me to look it up in the un-indexed documentation. *Clipper*, moreover, does not utilize *dBase III* index files, but requires you to build *Clipper*-unique **.NTX** files. First, you must compile a **.prg** program that they have given you to create these **.NTX** files, and then execute this compiled program, feeding it the name of the programs. This would make for tough sledding if you intended to use your index files at the dot prompt as well as from within your program, and constitutes incompatibility with *dBase III* index files.

dBIII Compiler, on the other hand, did compile my code, refusing only to deal with a **SET TALK ON** I had put in (to give the user something to look at on the screen while the program was reindexing). It returned an error message in plain English indicating that the **SET TALK** was always assumed **OFF,** and went on compiling. My plain vanilla program merrily compiled, linked, and even executed when it was all done. Unfortunately, *dBIII Compiler* also had trouble with my **REPORT FORM** and failed to set the printer on for me. I guess I'd have to rewrite the program to fit the compiler's idiosyncracies.

Unfortunately, *dBIII Compiler*'s execution speed was not impressive. At a recent meeting, the Marin *dBase* User's Group felt it was as slow as the original *dBase* code, and in the case of appending one record to an indexed file, slower than the original code. But its documentation is quite humanely written. Compiler documentation is, it appears, unavoidably heady stuff, and WordTech has done an admirable job in the clarity of its documentation. I look forward to improvements in their product, including Memo field handling, improved program execution speed and macro handling, and one-father-with-multiple-children file relationships. The latter is a feature that *Clipper* contains and which *dBase III* itself should also have (but doesn't).

I spoke to many people at the Faire who had had experience with either or both of these products. There were many diametrically opposed observations and opinions about them both. The wisest conclusion I heard was that these are both unfinished products. I agree. *Clipper* is particularly behind in presenting a product that is easy to get going and which successfully compiles everything you give it. Nantucket must make large improvements in the clarity of their documentation and compile time error messages, and possibly re-think the incompatible **.NTX** files.

If you *must* have a compiler right now, try *dBIII Compiler* and be prepared for some effort on your part to bring it all together, keeping in mind that at present the code it produces is not very fast. Almost inevitably, you will have to alter your program to make the compiler work for you. I look forward to improved products from both these companies and to a reasonably priced compiler from Ashton-Tate. *Then* we'd get some user-friendly documentation. □

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GAME SOFTWARE

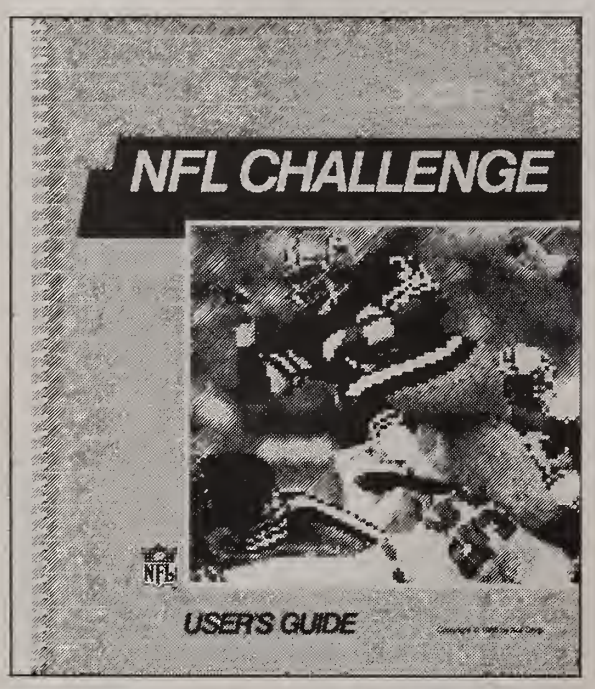
NFL Challenge

Published by: *XOR*
For: *IBM PC, XT, AT (256K minimum, graphics adapter recommended)*
Reviewed by: *Bennett Falk*

Don't be fooled! Sitting on the shelf, *NFL Challenge* looks for all the world like another computer game. In fact, it's a lot more than that.

NFL Challenge puts the entire NFL at your fingertips. You select a home team and a visiting team; you choose to have either a human (presumably you or a friend) or your computer act as coach for either or both teams. And then you just play football.

A coin is tossed. The rosters are reviewed. The ball is kicked and you're on your own. You select plays for the team you're coaching, then watch them succeed or fail. You have nearly fifty offensive plays and twenty-six defensive formations



***NFL Challenge* does an excellent job of simulating the professional football environment on the PC.**

from which to choose, and picking a reasonable play before the thirty-second clock expires is not always easy.

If you don't get intoxicated by the power *NFL Challenge* gives you to run your favorite team your way, you can just choose the plays and the program will see to it that you have the appropriate players in the game. If you really want total control, you can make your substitutions manually. Indeed, because the team rosters are maintained in ASCII files, you can adjust the personnel available to any team with any ASCII file editor (but be careful to back up the original rosters).

There's a lot more to *NFL Challenge* than play selection. If you look at the rosters of the various teams carefully, you'll find that they contain accurate information about the players on each team and that each player has a skill level assigned. The skill levels of the personnel on any team will determine how well the plays you choose will be executed. In addition to the players' skill levels, *NFL Challenge* throws in fumbles, interceptions, penalties, and injuries with remarkable fidelity to each team's statistical "personality." With *NFL Challenge* you will have to be a hell of a coach to get the Houston Oilers past the Miami Dolphins.

In addition to a very realistic simulation of NFL football, *NFL Challenge* includes a number of frills which make it fun to use. You can save and restore games, see statistics for the current game at any moment during play, and change the speed of the game. There is even an "undo" feature that allows the replay of the most recent down (though replays are NOT allowed to affect the course of the game).

If you have a PC with only a monochrome display adapter, you will have an overhead view of the field with a marker showing the current line of scrimmage. After each play, the results are reported in a pop-up window: who carried the ball, who tackled the ball carrier, and what the net gain or loss was on the play.

If you have a graphics adapter, you will be treated to an animated representation of the plays you call. The screen will clear and you will get a close-up overhead view of the field as the offensive team (a swarm of "O"s) breaks its huddle and lines up to face the defensive team ("X"s of course). You then see the play run in detail, with every member of each team carrying out some assignment. The animations are fun, but they leave little to the imagination: you will probably find yourself quarrelling occasionally with the quarterback's choice of receiver or wondering whether the ball really did bounce off the back of a wide open receiver's helmet. You may find that the game moves more quickly and is less of a strain on your attention span when you play without the animations.

There is very little to complain about in *NFL Challenge*; my chief complaint is that it would be nice if there were some way other than the "PrtSc" key to get things printed.

NFL Challenge may sound like a complicated game. It is, but only because professional football is a complicated game. You will spend very little time learning how to set the game up and how to control the "user interface." Consequently you will be able to spend much more time working with the offensive and defensive playbooks that are included. The documentation for both the computer interface and coaching strategy is simple, colorful, and well-produced.

The design of the game is excellent. *NFL Challenge* is a rare item: a sport-oriented, mass market computer product that could also be used as a coaching tool. The simulation holds up well: it is not easily fooled into letting unrealistic play selections succeed, though it does seem to be the case that the "inside charge" defense that is recommended in short yardage situations will almost always succeed on first and ten situations well.

If the NFL season you're seeing on television or at the stadium is not what you want it to be, or if you're just curious about coaching decisions, or if you can't get enough football, try *NFL Challenge*. It won't disappoint you.

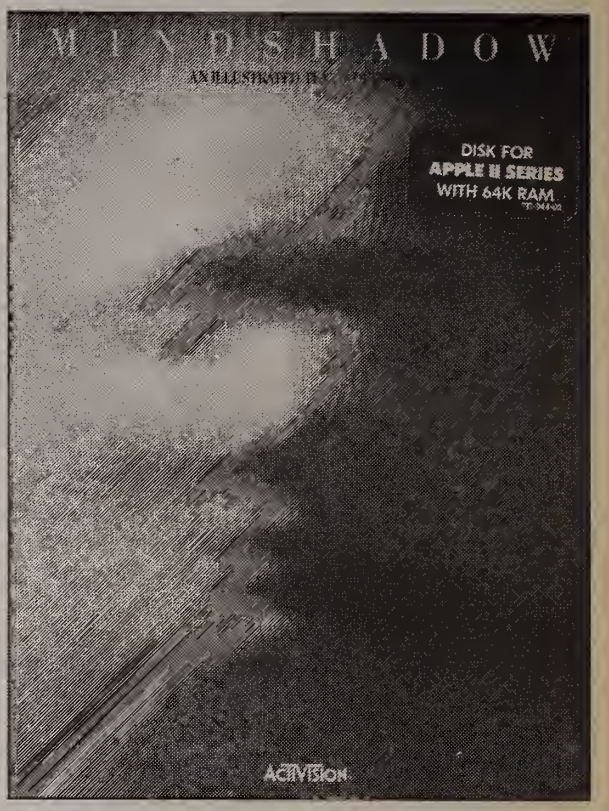
Mindshadow

An Illustrated Text Adventure

Designed by: *Interplay Productions*
Published by: *Activision*
List Price: *$34.95*
For: *Apple II computers (64K required, color monitor preferable)*
Reviewed by: *Mike Markowitz*

"A lonely beach. A lifeless hut. And one heck of a headache are presently the sum of your existence. You must now begin a long, dangerous journey to find your identity."

So begins *Mindshadow*, an illustrated text adventure game from Activision (the folks who do all those arcade games for Atari game machines). Intended for beginners in adventure gaming, *Mind-*



***Mindshadow* is designed for beginners in text adventure games, but still poses some tough challenges.**

shadow still manages to pose some tough problems, beginning with the challenge of getting off a desert island. (Forget swimming, you'll just be a snack for the sharks.)

Documentation consists of a tiny leaflet and a hint booklet that will cost you an additional buck by mail (buy it, you'll need it). One side of the disk is a "tutorial" that effectively teaches the basic conventions and strategies of interactive fiction. The basic commands (examine, take, get, drop, talk, read, turn, push, open, close, go), moving, taking inventory and mapping your little world are presented.

Three times in a game you can type HELP CONDOR, and that magnificent bird will appear to offer sarcastic advice. Over 80 different high-resolution graphic screens with some clever "animated" effects are used in the game. There are the usual delays for disk access when a new screen must be loaded into your computer's memory.

A game in progress can be saved at any point. Some common game functions can be entered by simply pressing the Control key and a number. You can review the last 24 lines of dialogue by just pressing the RETURN key. The designers have obviously taken pains to make things easy for the poor adventurer. For the dedicated puzzle solver or mystery fan, *Mindshadow* should be an absorbing entertainment. But I've just about given up on trying to get off this damned island. No thanks, I refuse to peek at the hints.

Captain Goodnight

And The Islands Of Fear (1985)

Designed by: *Michael Wise*
Published by: *Brøderbund*
For: *Apple II (64K and joystick required)*
List Price: *$34.95*
Reviewed by: *Mike Markowitz*

"OK men, listen up. Can anyone tell me the characteristics of a good video arcade game? What do you say, Capuzzo?"

"Exciting, state-of-the-art animation and sound effects, sir."

"Very good. Anything else? Speak up, Hennessey."

"Well, Colonel, how about strong player identi-

GAME SOFTWARE

fication with the roles and situations, based on images from popular movies?"

"Right! Can you add anything to that, Stauffenberg?"

"Ja, mein Oberst, der game musst haff ein good learning curve."

"Explain what he means, Rabinowitz."

"Sir, a good learning curve is where you can make progress each time you play, but it's not so easy that the game rapidly becomes boring."

"Excellent, men. I can see this mission will be a snap."

* * * *

Captain Goodnight And The Islands Of Fear from Brøderbund is a series of linked arcade action sequences making up a "full-length adventure." If

***Captain Goodnight And The Islands Of Fear* is a series of arcade adventures making up a full-length game.**

you thought that nothing new could be done on the Apple with a joystick and screen graphics, look again. With *Karateka* a few months back, the designers at Brøderbund started breathing some new life into the tired old Apple. This game continues the trend, with a sense of humor (some adults may find it heavy-handed) and extremely challenging shoot-'em-up action.

Captain Goodnight is your typical fighter ace, secret agent and yo-yo champion. To save the world from the evil Dr. Maybe's Doomsday Machine, he has to fly through heavily defended airspace, cross a nasty desert patrolled by killer robots, and somehow reach the island to defuse the machine by entering the right code sequence.

As in Brøderbund's classic *Choplifter*, the two-dimensional animation takes place against a black background, scrolling from right to left. The joystick buttons control various functions: firing weapons, entering vehicles, etc. Expect to be shot down in flames repeatedly. There is a resurrection feature, however, that does not send you back to the very beginning each time you are "killed." As you make progress, you are restarted from successively later points in the action.

There are all kinds of goodies in the box, including a Captain Goodnight sticker, a map and a secret decoder you need to finish the game. Since both sides of the disk are needed to start the game, one assumes some pretty fancy copy protection was employed, but the game seems to run with no disk problems.

The game is played against a time limit. As you

GAME SOFTWARE

get killed, you run out of time, until the screen "self destructs" with some spectacular effects. Some "survival hints" in the instruction leaflet greatly increase your chances as a beginner, but this reviewer, his hand-eye coordination numbed by too many hours at the keyboard, still can't reach that island. Younger players should have better luck.

If you haven't seen the current crop of arcade games for the Apple, you may be surprised by how much can be done within the limitations of 64K on a machine that was never really designed for color graphic animation. The list price of $34.95, of course, represents almost 140 quarters, which would get you up to the beginner level on any of the video laser disk marvels down at the local arcade. (Brøderbund, 17 Paul Drive, San Rafael, CA 94903.)

EDUCATIONAL SOFTWARE

Success With Algebra

Grade Levels 7–12
Graphing Linear Functions (one disk)
Simultaneous Equations/Quadratic Equations (two disk set)

Developed by: *Don Ross*
Published by: *CBS Software*
For: *Apple, Commodore and IBM PC computers*
Reviewed by: *Mike Markowitz*

Distribution can be a real problem for quality educational software, so it's gratifying to see that giant CBS has picked up this comprehensive, self-paced algebra tutorial from little family-owned Microcomputer Workshops Software.

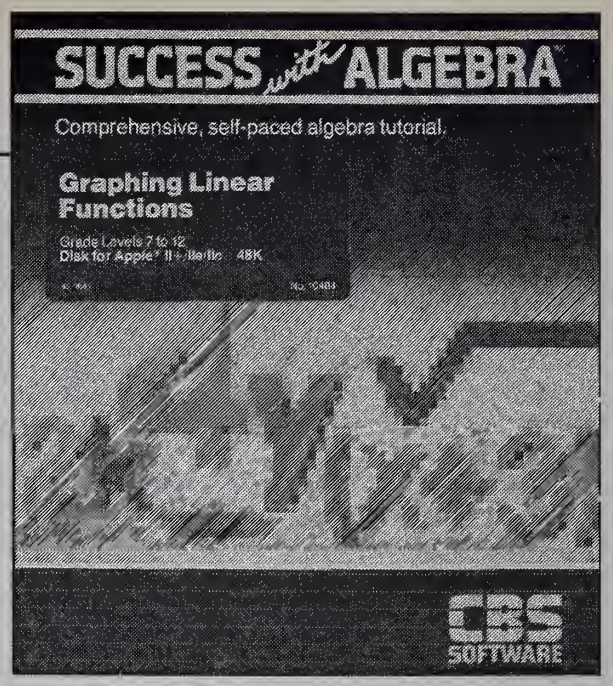
Algebra, of course, is fundamental to any kind of technical or scientific education, and for many, many learners it can be a real ordeal because of the very abstract and "formal" structures it embodies. There are variables and constants. Equations express the numerical relationships between variables. A line on a graph can represent an equation. Huh?

The extraordinary thing is the way that abstract algebraic expressions can model or predict the behavior of the physical universe. Since Hiroshima, "$E=MC^2$" has been more than just an equation.

The two packages reviewed here tackle some of the toughest concepts in elementary algebra with great success. They demand some effort and attention from the learner, but they will not let him or her fail. Each package, in a small cardboard box, includes the disks and a tiny 123-page "manual." There is no need for fancy documentation, however; the programs are completely self-explanatory.

Graphing Linear Functions uses the computer's graphics capability to do what even the best teacher cannot do on a chalkboard: create perfect grid coordinates and draw perfect straight lines. The learner sees how all the values that satisfy a particular "linear" equation fall neatly on the same straight line. Someday, perhaps, this learner will discover that these lines are not just maps of what we know, but powerful tools for predicting what we do not yet know. This little program lays a firm foundation.

Simultaneous Linear Equations teaches a most wonderful truth—if you have two different equations with two unknowns, you can often solve for both unknowns at once! The joint solution lies at the point where the graphs of the equations intersect.



***Success With Algebra* is a comprehensive, self-paced tutorial that helps the learner through some of the most difficult elementary algebra concepts.**

Solving Quadratic Equations requires the user to solve the tricky little puzzle called "factoring." You must find the two "factors" that, when multiplied together, will produce a particular equation. (Understand that the complete, general solution to this problem took centuries to discover, and represented one of the great achievements of the human mind, the binomial theorem.) Here we just have the first baby steps, but the program ensures that the learner takes them securely.

The learner's errors are called out and corrected as they occur in these programs, and an error analysis is given at the end of a series of problems. Since the problems are generated randomly, you can work through the tutorial many times and still find fresh examples each time.

I wish I could have used such programs when I learned Algebra. I wish I could have used such programs when I tutored it. I am glad they exist today, and hope CBS continues to make such quality learning available to students lucky enough to have access to computers.

BOOKS

The Best of Apple Public Domain Software

Published by: *The Public Domain Exchange*
List Price: *$6.95*
Reviewed by: *Mike Markowitz*

This book is a brief directory of 227 disks for the Apple II family. The programs are classified under twenty different subject headings, such as Art, Games, Math, Music, Utilities, Pascal, CP/M and "Passion" (two sides of X-rated graphics and games. Parental discretion advised). There may be twenty or more separate programs on each public domain disk, and each is described in no more than a sentence.

Any disk in the catalog can be ordered for five dollars plus a nominal shipping and handling charge. A great deal of the material listed is old stuff that has appeared in other catalogs, but it is always worthwhile browsing through these collections for new or useful programs. Public domain software is particularly valuable for new users who are still learning their way around the Apple environment.

The Best Of Apple Public Domain Software certainly belongs in the library of any Apple user group, and the hardcore hacker who gets excited over tricky utilities will probably want his own copy. An index, glossary and tear-out order forms augment the usefulness of the book. (The Public Domain Exchange, 673 Hermitage Place, San Jose, CA 95134, (408) 942-0309.)

BOOKS

Tools For Thought

Published by: *Simon & Schuster*
Price: *$17.95 (hardback)*
Reviewed by: *Marshall Smith*

It looks like San Francisco author Howard Rheingold has come up with the perfect answer to the question computer enthusiasts seem to be asked with increasing frequency these days. The next time somebody asks you "whatever happened to the computer revolution?," just tell them what Rheingold's *Tools For Thought* (Simon & Schuster) claims—that the real revolution hasn't happened yet.

Rheingold explores and explains the dimensions of this impending social transformation by examining the work of a dozen-odd (and I do mean odd) geniuses, most of whom have been ignored by previous histories. Through a series of interconnected vignettes that read more like a good historical novel than a computer book, *Tools For Thought* paints a picture of a plausible utopia in which computer-amplified minds commune via vast distributed networks, and schoolkids carry the Library of Congress and the Metropolitan Museum in their pockets. Just the kind of upbeat vision needed to counterbalance the present myopic concern with the ups and downs of the semiconductor industry.

Together, these stories about the different individuals in different times and places who undertook the same quest—to build a machine capable of amplifying the power of the human mind—offer a glimpse of the directions this technology is likely to take when it comes along. And the way this book is written and organized, you end up knowing how bit-mapped graphics and Turing machines work, along with the basic concepts of information theory, Boolean logic, human interface design, and the principles of mind amplification—without even noticing that you were learning something.

The stories and the ideas were what drew me along. The educational value just sort of soaked in, by osmosis. History, technology, computer theory, and intellectual speculations are woven into a kind of "history of the future." There's George Boole, who was struck by a vision at the age of seventeen, while walking across a moor, and spent the rest of his life creating the logical foundations for computation. Lady Lovelace was the first programmer, who lost a fortune at the horse-races and tried to use the "analytical engine" built by her cranky mentor, Charles Babbage, to handicap horses.

Awkward, shy Alan Turing was the first hacker—at the age of 22 he wrote the paper that defined computation; at 23 he helped England in the Battle of the Atlantic when he cracked the German Enigma code. Johnny von Neumann spoke five languages and could recite dirty limericks in all of them; although few people today know his name, he was a key figure in the invention of the three most potent technologies of our time: computers, nuclear weapons, and intercontinental missiles.

Back in the early 1960s, Doug Engelbart talked about using computers to "augment human intellect," and everybody thought he was crazy—except for the Defense Department's Advanced Research Project Agency, who gave him a million dollars a year to do it. The first mouse, the first windows, the first word-processor, and many other innovations that have become standard components of today's computers were first invented by the wizards at Engelbart's Augmentation Research Center. And when they left ARC, his proteges joined forces with ARPA hackers and computational prodigies from around the world to create the first true personal computers at Xerox Corporation's now-legendary Palo Alto Research Center—PARC.

Public attention seems to be focused on the ups and downs of today's personal computer industry, rather than the potential of the technology. Where did the future go? If you want a taste of what computers can become—what they must become, if we are to manage our increasingly complicated civilization—and enjoy a page-turner in the process, look at *Tools For Thought*.

GRAPHICS SOFTWARE

Animation Station/ Design Lab

Manufactured by: *Suncom, Inc.*
Design Lab software by: *Baudville Ltd.*
For: *All Apple II and Commodore 64 computers*
Suggested retail: *$49.97*
Reviewed by: *Mike Markowitz*

Your Apple dealer may be waiting eagerly to put a mouse in your hand, but maybe you just need a tablet. The tablet, in this case, is a new pressure-sensitive drawing pad called *Animation Station* from Suncom Inc. Until now, this type of graphics input has been dominated by one brand name: Koala Technologies with their handy, compact Koala Pad. Suncom is offering a cheaper device with equivalent performance in a larger package. The accompanying software has some odd features, but it can be used to create some very effective graphics and text.

Physically, the *Animation Station* measures about 9½ by 7 by 1½ inches (24 by 18 by 3.7 cm.). The drawing surface measures about 4 by 6 inches (11 by 14.5 cm.). Aesthetically, it resembles a sandbag — this is not a candidate for the 20th Century Design Collection at the Museum of Modern Art. The two control buttons are duplicated on the left and right sides, a feature all left-handed users will appreciate. A simple plastic stylus slides into a hole in the device, but there is no provision for tethering or securing it. A small toggle switch enables the unit to "emulate" an analog joystick. We tried this with several arcade games. *Zaxxon* worked fairly well, but the unit was useless with *Seafox* and extremely sluggish on most others. The "feel" is all wrong.

The unit plugs directly into the game port on the IIc or IIe, and there is a generous cable 5 feet long (1.5 meters). For the II+ or the Franklin, an adapter plugs directly into the game socket on the motherboard inside the computer. We tested the unit on a Franklin Ace 1000. It worked flawlessly.

When you put the tip of the stylus or your finger down on the grid-marked surface of the pad, a cursor shaped like a + sign appears in a corresponding location on your screen. Depending on the software you are using, this cursor can be used, in coordination with the buttons, to draw, to select menu items, to edit or erase text and graphics.

We tested the unit with the Koala *Micro Illustrator* software, *Fontrix* and *Newsroom*, as well as *Design Lab*, the disk provided with the package. The only problem was some difficulty in accessing the bottom of certain screens in *Newsroom*. Using the tablet requires a bit of coordination. If you lift the stylus from the surface *before* releasing the button, you can spoil your drawing by leaving a stray line trailing off the edge.

Design Lab, the program that supports *Animation Station*, is a delight to use. The main menu appears as a series of icons around the edge of the screen. It can disappear or be recalled with a click of the button. It has the usual features for drawing boxes and circles and filling them with colors or textures. There is a nice magnification feature that allows you to zoom in on a small "window" and edit pixel by pixel for extremely precise (and time-consuming) graphics. Five type faces can be selected and freely combined with a wide variety of "shape tables" stored on the disk. These include human faces, animals, buildings, trees, geometric shapes, musical instruments and symbols. Shapes can be rotated or "flipped" (mirror-image), but they cannot be scaled up or down. The entire screen can be erased by selecting the "trash can" icon, but there is no selective eraser. To erase the last thing you did, you simply hit the "un-do" button.

The printer dump utility, selectable from the main menu, is superb. It supports Apple, Epson, Gemini, IDS, Okidata, Panasonic, Prism and Prowriter printers and 20 different printer interface cards. We were unable to test the unit with any color printer. The printer dump routine prints "sideways" on the sheet (graphic artists call this "landscape" layout). Either a positive (black dots on white paper) or a negative (white dots on a black background) image can be selected — be sure you pick the right one or you can rapidly beat the tar out of your printer ribbon! Images created with other programs *may possibly* be printable using *Design Lab*. The printer dump routine recognizes pictures by the file prefix "PI." and "windows" (sections of a picture) by the prefix "WI." By renaming files created on other programs you can get *Design Lab* to print them out, but they may not be recognizable. Some programs like *Newsroom* use image compression techniques that create scrambled garbage when printed out by a different program. An odd feature of the program is the requirement that you specify your printer and interface card every time you use the software. Most programs prompt you to configure the system once, and then store these few facts in a file on the disk. *Design Lab* has no write-enable notch, however, to prevent the user from accidentally trashing the program by trying to save a picture, or anything else, to the disk.

The manual provided with the package is easy to read and clearly illustrated, but it suffers from a common problem: the "one size fits all" syndrome. The authors try to cover both the Apple and the Commodore in a single book. The differences between the two machines, especially in the way they handle color, makes for a long digression in the middle of the text. Differences between versions of the software are glossed over — for example, there is no index of the type faces or shape tables. The user must explore the files to find out what is available. This is irritating! The manual also fails to repeat some important cautions that appear in small print on the bottom of the unit:

DO NOT SUBMIT TO EXTREME HEAT OR COLD
DO NOT EXPOSE TO MOISTURE
DO NOT DROP
USE ONLY STYLUS SUPPLIED OR THE SOFT PART OF FINGER ON PAD SURFACE

Since few users will read the bottom of a new piece of equipment until it is too late, the cautions should be in the book. There are also two adjusting knobs on the bottom of the unit, but their use is not explained. Perhaps the authors think that anyone who does not already know how to center a cursor should not be fooling with fine adjustments.

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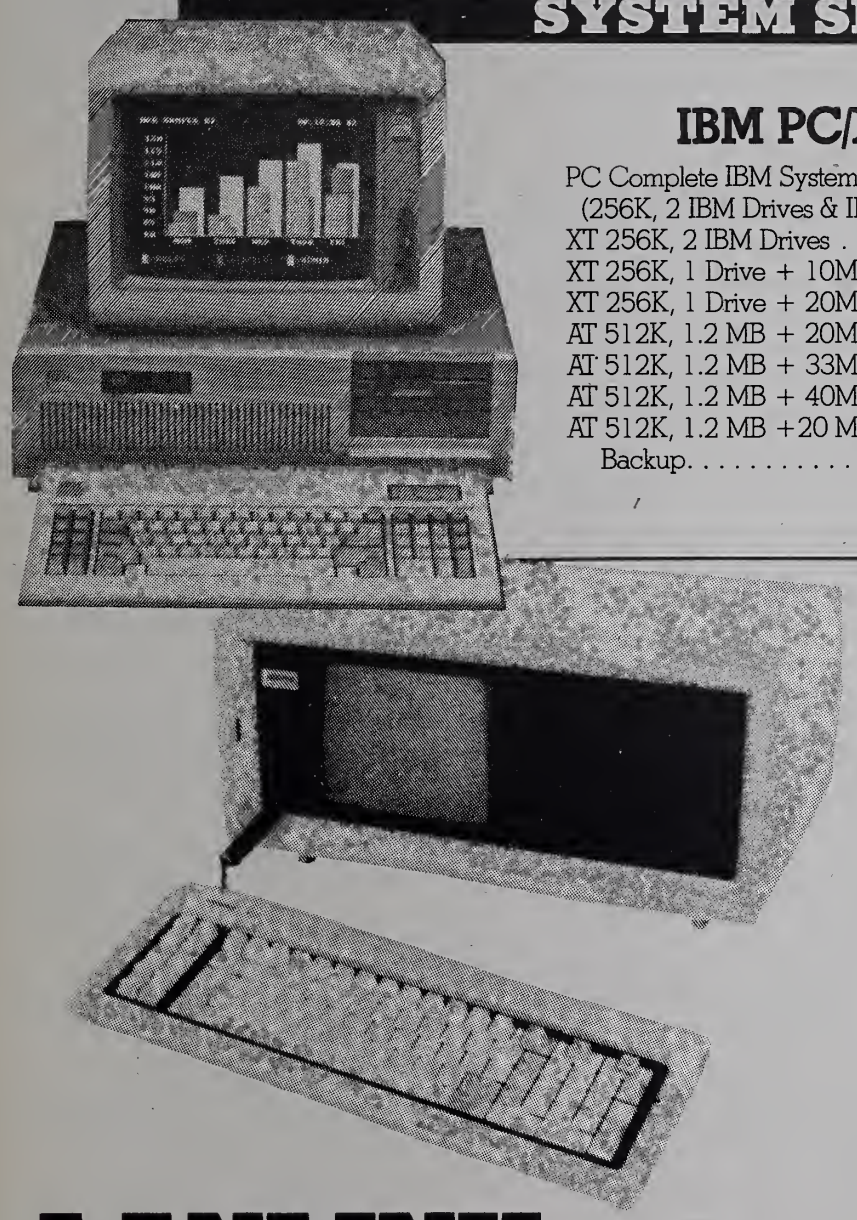

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USER GROUP NETWORK By Mary Eisenhart

While visiting the **LA Computer Sellathon and Expo** last month, we renewed our acquaintance with **Terrie Masters of the LA 99er (Texas Instruments) Computer Club**. Terrie, who was one of the first user group folks to list her group with us in our early days, had marshalled her forces and sent out postcards to the farther-flung TI groups, inviting them to come to the Expo. Many of them took her up on the invitation, with the result that the 99ers' booth was one of the most consistently mobbed at the Expo. Despite the fact that the 99 is an orphan computer of sorts, manufacturers were in the booth demonstrating various products that would enable the diehard TI user to get the most out of the machine. Also, Terrie paraded a steady stream of visiting dignitaries from outlying groups over to our booth, with the result that we now have listings from TI groups in Antelope Valley, Riverside, and the San Fernando Valley. All day we were deluged with enthusiastic reports on the sterling qualities of TI machines, coupled with the plaintive refrain, "There's three million of us out here. Do all the developers think we died or something?" Offhand, it seems like the TI 99 and its devotees are anything but dead.

Also well represented at the Expo was the **Original Apple Corps**, the world's first Apple group. **Russ McCaffrey** and **Fred Duffy** stopped by to extol the club's many virtues and to extend an invitation to all interested parties to drop by the O.A.C.'s meetings, which are held the second Sunday of the month at the Culver City Howard Johnson's. Call Russ at (213) 371-7362 for info, or write the O.A.C. at P.O. Box 90065, Los Angeles, CA 90009.

Lots of mail from BBS-ers this month. People of the survivalist persuasion will be pleased to know that **Don C. Kuhla** of Sebastopol has the **Survival Communication Board** up and running. Don writes, "As a survivalist, I have often longed for the opportunity to exchange ideas and views with others of the same persuasion, freely and openly. Well, about a year ago I was struck with an idea, and eight months ago SCF was born." SCF includes nine conference areas on various topics, private E-mail, a resource database, file and program transfer, and online product catalogs. (Don adds, "We purposely chose not to promote SCF for the first six months of operation. Now we are beginning to actively promote it, and are chasing the local hackers away so we can concentrate on our prime topic, Survival.") The board can be reached 24 hours a day, 7 days a week, at (707) 545-0746, 300/1200 baud. Access is free, and Don's committed to keeping it going for at least two years.

If survivalism is a bit heavy-duty for you, you might want to check out **Bond Shands'** (of **Kay* Fog BBS** fame) *new* BBS, the **KBBS Forum**. It's a general-interest conferencing BBS, open to all, and runs seven days a week, 24 hours a day at 300/1200 baud. To register, send your name, address, phone number, an 8-digit password and $2 handling fee to Bond at Golden Gate Information Systems, P.O. Box 11135, San Francisco, CA 94101. The board's number is (415) 826-2131.

Then there's **R. McCan**, who writes in to inform us of the existence of the **Earth-Rite BBS**, 300/1200 baud, 24 hours, (415) 651-9496. Says McCan, "We specialize in Earth Religion and related topics. We are not a software exchange." Earth Religionists, take note, and call in.

In SoCal, the **Oracle BBS** is up and running. It's a multi-user, multi-interest BBS running six phone lines on a Compupro. **Gary Young** writes that the board's features include 8K messages, comments, matchmakers, an adult material section, online chat, and more. The Oracle can be reached 24 hours a day at (818) 980-6743. System password (in, no doubt, an effort to find where users are being referred from) is MICROTIMES. So hey, make us look good. Call the Oracle and tell them **Micro-Times** sent you.

And in scenic Silicon Valley, **Dusty and Candy Van** are operating the **Shark's Head BBS**, with what seems to be an extremely healthy attitude—they characterize the board as having "something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user-friendly, we're friendly users." So drop in at (408) 247-4810, and say hi to these genial folks.

There's also a new consumer group for home computer users, so if you're looking for a source of timely consumer information and a place to post grievances, you might want to check it out. **Consumer/Link Club** is being offered by American People/Link, a vendor of online services—it is not free, but it might turn out to be useful to you. If you're interested, contact **John D. Cross**, Chairman, Consumer/Link, P.O. Box 250404, San Francisco, CA 94125, (415) 588-6299. Or call American People/Link at (800) 524-0100. AP/L is offering three free hours of connect time through Telenet or Tymnet with initial membership.

The **Santa Rosa Commodore Users Group** also has a BBS at (707) 526-7474, 300 baud, 8 bits, 1 stop, no parity. According to **Glenn Taylor** of SRCUG, who's also the board's system operator, the board offers Commodore articles, downloads, and nine message bases; it runs 24 hours a day.

And finally, **Derek Vincent** of Tarzana is promoting his absolutely free **ACE-RBBS** with enthusiasm and glee. ACE, which Derek modestly characterizes as "The Ultimate IBM BBS In The Nation," runs on an IBM XT with a 10 MB hard disk, and is accessible 24 hours a day, seven days a week. The board's features include conferences, E-mail, downloads and discussions, plus software and video charts, concert information, and a lottery ticket giveaway. Derek is quite anxious to hear from you at (818) 345-4485; for more information you can contact him at ACE-RBBS Tarzana, P.O. Box 1305, Woodland Hills, CA 91365.

Novice BBS-ers may want to peruse this month's telecommunications column, in which our own **Brock Meeks** passes on useful tips for making yourself a well-regarded (as contrasted to universally despised) user of boards.

On other fronts, controversy seems to be raging in the ranks of the **FOG**ers these days. In the October issue of the *FOGHORN* (the national newsletter of the erstwhile **First Osborne Group**, now a more general portable-and-CP/M group), President **Frank Morton** explained that, in response to requests from numerous members who were compelled, for one reason or another, to use MS-DOS machines, FOG would be test-distributing an as-yet-untitled newsletter devoted to 16- and 32-bit MS-DOS machines. Morton emphasized that "we have no intention of changing or diminishing our CP/M support. We intend to continue to champion the use of CP/M for as long as there are CP/M users . . . [But] we cannot hold back progress, and CP/M is not the only viable operating system that is in use today. I can envision FOG supporting CP/M, MS-DOS, UNIX, and any other operating systems that are used by the membership." Morton concluded by inviting comment (of which he's likely to get plenty) and directing the members' attention to the sample of the new magazine (incorporated into the October *FOGHORN*).

Well, this didn't seem to sit too well with the **East Bay FOG** in Oakland. In their October newsletter **Random Output**, an unsigned editorial complained bitterly about FOG's diversification. "Let us be clear on one point," it read. "The trustees are using our money, $7,000, to subsidize the start-up of the new magazine. They have made no plans for repayment. East Bay FOG members want help with *WordStar*, or with *dBase*, or with their modem or printer or something, all of which are connected to or running on their Osbornes, or occasionally their Morrows or other machines. These people are users, our reason for being. Those who must use SKEEZIX or BS-DOS for their work should not depend on FOG to support them for the rest of their lives. Perhaps they should form another group—but not at our expense."

Whew.

Feelings seem to be running high on this issue. Hell hath no fury like an embattled CP/M user. Anyway, all FOGers and other interested parties are invited to send their comments to FOG, P.O. Box 3474, Daly City, CA 94015-0474. Also, feel free to write us a letter on the subject for our letters column.

Before we bid a fond farewell to CP/M for this issue, a couple more notes. **East Bay FOG's BBS** is alive and well at (415) 655-1206—the group's library is on file, and members may download programs after first calling and having their access verified. And **BAKUP (Bay Area Kaypro Users and Programmers)** reports in the October *BAKUP News* that there's now a Kaypro Conference on **The WELL** (which, as you may recall, has a lot of other neat things going on too). The WELL can be reached at (415) 332-6106 (modem) or (415) 332-4335 (voice); rates are $8.00 per month, $2 per hour.

Frank Nagle of the **Bay Area Atari Users Group** announces that BAAUG has changed its meeting location. Meetings are now being held at the Ford Aerospace Cafeteria, 3939 Fabian Way, Palo Alto. Call Frank at (415) 791-5461 for more info; the meetings are still on the first Monday of the month. You might also like to know that BAAUG has an **Atari 520ST Special Interest Group**, led by **John Schreier** at (408) 281-8930. And furthermore, I discover on reading the BAAUG newsletter that it was thanks to this kindly group that my beloved nephew **Paul** (and God only knows how many others) went home from the **PC Faire** with joy in his heart and a styrofoam safari helmet on his head. Thanks, guys.

This month's *Syntax Error*, the newsletter of **C-TUG (Commodore Technical Users Group)**, announces that the club will be sponsoring a swap meet on December 22 at Mercury Savings in Tustin from 10 am till whenever. You might want to write *Syntax Error* at P.O. Box 8051, Orange, CA 92664 for info, or call their editor (anonymous, as nearly as I can figure out) at (714) 639-1326. Also, some C-TUG members are considering the notion of having a computer-related odds-and-ends auction. If this interests you, leave E-mail on **C-TUG** (714) 458-1288, **RAM** (714) 740-1045, **Eagle** (714) 641-8342 or **SYSTEM 3** (714) 974-7802. Address E-mail to *Syntax Error*.

On the somewhat more underground side, we've recently received our first issue of a fascinating journal (printed in microscopic type), ***2600***, which seems devoted to the cause of keeping hackers, phreaks and similar enthusiasts up to date on the latest wrinkles in phone technology. In soliciting advertisements, *2600* defines its readers as "hackers, security analysts, corporate spies, private consultants, and people who are just interested in what's going on," so if you think you fall into one of these categories, you might want to subscribe. The lead story in the October issue, by one **Silent Switchman** (other noms de plume include **Lord**

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USER GROUP NETWORK

Phreaker and **Ford Prefect**), is a genuine man-bites-dog story — i.e. phone company rips off hackers. The rest of the issue also makes for lively, if legally dubious, reading (e.g. "Readers: We don't know if these blue box plans actually WORK, but we'd love to find out"), ranging from technical diagrams to humorous news items to hints for BBS operators. If this sounds like the publication of your dreams, you can call (516) 751-2600 for further information, or write to *2600*, P.O. Box 752, Middle Island, NY 11953-0752. Subscriptions are $12 a year for individuals, $30 a year for corporations. *2600*'s BBS can be reached at (201) 366-4431. (Reassuringly, perhaps, *2600* assures prospective subscribers that "Our mailing list will never be sold, given away, or looked at by anyone outside of *2600*.")

Enough, already. Stay in touch. Write to **Micro-Times** User Group Network, 5951 Canning St., Oakland, CA 94609. Bye. □

BULLETIN BOARDS

Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, (415) 826-2131. 300/1200 baud.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.

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BAKUP (Bay Area Kaypro Users and Programmars) (415) 223-2237 RBBS & RCP/M — Must be a member of BAKUP, P.O. Box 20181, Oakland, CA 94620.

NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers.

BULLETIN BOARDS

Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SiMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

Sports for the serious fan! Latest scores, transactions, injuries and updates, plus the complete betting line for all NFL games, as well as baseball, basketball, hockey, horse racing, and boxing news and results. For personal I.D. and access code and more information, send your name, address and phone number to California Sports Book, 3550 Cattail Court, Union City, CA 94587, or call C/S/B BBS at (415) 471-3591.

ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Vortex BBS. (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

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Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 5 boards - restaurant, sales, Amiga, ST, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

Northern California L5 BBS Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

Tha Shark's Head BBS - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

Oracle BBS (818) 980-6743, system password MICROTIMES, is a multi-interest, multi-user BBS running 6 phone lines on a CompuPro. Features include 8K messages, comments on messages, match-maker, adult material section, online CHAT between users and much more. 24 hr., 300/1200 baud.

Earth-Rite RBBS. We specialize in Earth Religion and related topics. We are not a software exchange. (415) 651-9496. 24 hrs., 300/1200 baud.

KBBS Forum. A computer conferencing BBS for all. (415) 826-2131, 24 hrs., 300/1200 baud. To register: send name, address, phone number, an 8-digit password plus $2 handling fee to Golden Gate Information Systems, P.O. Box 11135, San Francisco, CA 94101.

Survival Communication Forum. The Survival Computer based communication system. Online 24 hours every day. Free access to all. Multiple conferences, private electronic mail, resource listings, file transfer, online survival product catalogs. 300/1200 baud, full duplex. (707) 545-0746. 1435 Sebastopol Rd., Suite 210, Santa Rosa, CA 95407. Don C. Kuhla, Sysop.

Gamenet Bulletin Board System. BBS is devoted 100% to gaming subjects. 24 hours, 20 boards, 10 D&D/RPG boards, Alkahest, professional book reviews. Unending Story, Adventurers' Training Ground, Game Hint, etc. Sysop: L.J. Phone: (213) 541-8039.

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Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

Junkyard Data (213) 867-9541. Multi-interest board in Norwalk with everything from jokes and for sale items to reviews (movies & software), trivia questions, an adults only section, etc.

Marina Matchup (213) 397-6300. This Mar Vista-based dating board operates with Martian software.

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HUG1. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. (213) 874-8256.

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The Dead Board (717) 334-8680, 24 hrs., 8 bit word, 1 stop bit, no parity, 300 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

ASSOCIATIONS

California Software Electronic Consultants (CALSEC) California Software and Electronic Consultants Network. Support Groups — Workshops — Legal Referral — Newsletter. $30 Membership or SASE to CAL-SEC, 3046 College Ave. #4. Berkeley, CA 94705.

Community Entrepreneurs Organization (CEO) Business networking group meets around SF area. Invests in new products, markets, brainstorms. Share info. on tech and non-tech business issues. 4 meeting locations, various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael, CA 94912. (415) 435-4461.

Computer Professionals For Social Responsibility P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay) 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Ramota Accass Computer Standards Association) offers to clubs,

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BAYMUG. Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetingsl Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet the third Monday at 7:30 pm at the Nuclear Information Center, 1431 Ocean Ave., Suite B, Santa Monica. Phone (213) 747-3219 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, C 91344, (818) 368-1383.

NATIONAL/ INTERNATIONAL USER GROUPS

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Franklin Users Group International. Supporting users of II, II + , Franklins, and all compatibles. We support all members with a monthly newsletter, "The Clone Ace," a growing public domain library and personal attention. Membership $15.00 a year. Contact Douglas M. Trueman, EastWind Apt. L77, Tecumseh, MO 65760.

68796 Hackers. 68796 (68000 + IEEE-796) is the only users group supporting hobbyists constructing WICAT 150/Minisystem, Multibus, and 16/32 bit systems. In addition to the 68796 Hacker's Newsletter, we are putting together a disk library. Dues $20/year. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94062. (415) 851-7031.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, — 35100 Padua, Italy.

F.O.G. 15,000 member group supporting all CP/M users. Dues of $24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270 + disk library, 40 + RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140 + local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

Getec s.r.l. Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milar, Italy. Phone: 39/2/5696502, 39/21 5694185.

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USER GROUPS

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALTOS

Altos PC User group forming in West LA area. Contact Margaret Beemer, History Department, UCLA, Los Angeles, CA 90024.

APPLE

Original Apple Corps. First Apple group ever. Contact Russ McCaffrey, (213) 371-7326, or Fred Duffy, (213) 396-5515.

The Orange Apple Group All Apple owners are invited. Members are knowledgeable on many usages of all types of Apple machines. Meetings are on the first Saturday of every month from 9:00 to 12:00 a.m. For info, call (714) 897-8943.

South Bay Apple III User Group Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on IIIrd Tuesdays at 7:30 p.m., UCLA

APPLE

Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Pasadena Apple Users Group (PAUG) Meets at Century Federal Savings, 199 North Lake Avenue, Pasadena, CA (corner of Lake and Walnut). Enter from the parking lot side. Take the elevator to the basement. The bank unlocks the doors at about 7:15 pm and the meeting starts at 7:30. No dues, new members welcome.

Wabash Apple Users Group Product demos of software and peripherals, discussions, help from experts. Public domain library. Meets twice a month at the Burbank Public Library, 110 N. Glenoaks Blvd., Burbank. Some months there are *no* meetings, so call Marie Kaden for information: (818) 846-6682.

AT&T

AT&T 6300 West LA: AT&T 6300 or 8086 compatible (desk pro) group forming. Contact Miles Hillis, (213) 472-3522, leave name and interest.

ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and BBS privileges for members. Dues $24.00/yr., $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 123, Huntington Beach, CA 92647, 4th Sunday of each month, 1-5 pm. BBS: (714) 731-6523.

West LA Atari Users Group. Come join fellow Atariansl Dues are $20.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting roomI If you're reading this, you belong with us. Meetings first Wednesday of the month, 7 pm, Paul Revere Jr. H.S., 1450 Allenford Dr., Brentwood. Call John Scheid, pres., for more information (213) 829-7239.

Los Angeles Atari Computer Enthusiasts (LAACE) meets 2nd Mon./mo. at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. Contact Bob Keimach, (818) 368-6243.

COMMODORE

Club 64 National user group. Monthly newsletter, BBS, group purchasing, public domain software, much more. Contact: Robert Johnson, (213) 925-4049.

San Diego Commodore Users Group Meets third Tuesday, 7-10 pm, at VFW Bldg., 19th and Broadway, San Diego. Contact Jane Campbell, (619) 277-7214 (between 5 and 9 pm) for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

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USER GROUP NETWORK

COMMODORE

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 1095 Irvine Blvd., Tustin, CA 92680, fourth Sunday of the month, 11 am. Contact Tony Soto, P.O. Box 1497, Costa Mesa, CA 92628, (714) 953-0598.

C-TUG South Orange County. Classes on BASIC, M/L & Assembler; large public domain library, club newsletters. 300/1200 Baud Printer BBS. (714) 458-1258, El Toro. Meetings 2nd Saturday of the month, Mercury Savings, 23021 Lake Center Drive, El Toro, 2-6 pm.

Hollywood User Group (HUG) for Commodore 64. For further info write HUG, P.O. Box 38313, Hollywood, CA 90038; or call (213) 463-8973 (voice) or the HUG 1 BBS (213) 874-8253 24 hours a day.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower, just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 Riverton, Studio City, CA 91604, (818) 985-2647.

Inland Empire IBM/C-64 User Group. Major subjects are local area networks, data communications, and small business software. Meetings at 2174 W. Foothill Blvd., Unit E, Upland, CA 91786, every second Thursday of the month, 6 pm. Contact Franz Ende (same address).

EPSON

Cursor Club — Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

Foothill Epson User Group. We meet the fourth Tuesday of every month at Sparr Heights Community Bldg., 3311 Downing St., Glendale, CA, 7:30-9:30 pm. All are invited, speakers, questions, products, public domain disks, etc. Contact Gerald Jamriska, 2960 Hawkridge, La Crescenta, CA 91214, (818) 248-7133 for more info.

Epson Users Group of Orange County 6075 Jeffrey Mark Street, Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

San Fernando Valley Epson User Group. TUG-NET SIG, monthly newsletter, BBS, group purchase, public software, classes. Meetings at Western Federal Savings, 14600 Roscoe, Van Nuys, 3rd Wednesday, 7 pm. Contact Tom Keyser, P.O. Box 1524, Reseda 91335, (818) 705-6300.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

FUJITSU

Want User's Group Info Have Fujitsu Micro 16, am looking for a user's group or BBS. Contact Greg Lucido, 5199 E. Pacific Coast Highway, Long Beach, CA 90804.

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Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

IBM

The North Orange County IBM PC Users Group These people are interested in helping any PC users. They meet the second Tuesday of each month at the Sunny Hills Racquet Club in Fullerton at 7:30.

The Greater South Bay IBM PC Users Association Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 519-9365.

The Claremont Computer Club This club is for any interested IBM PC users. Meeting starts at 7:30 on the third Monday at the Galileo Edwards Bldg. on the Harvey Mudd Campus. For info call (714) 626-2286.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Monday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567.

UCLA PC Users Group. IBM/PC or compatible owners welcome to join us on 2nd Tuesday, 7 pm. Public domain library, SIGs, and newsletter. NPI Auditorium, UCLA, Westwood Plaza, Level C. Contact Anne Sylvester, 601 Ninth St., Santa Monica, CA 90402, (213) 451-5390.

Pasadena IBM User's Group. Meets 4th Wednesday of each month at Cal Tech, Steele Building, Room 102. For more info send SASE to Steve Bass, 711 E. Walnut Street # 305, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C-64 User Group. Major subjects are local area networks, data communications, and small business software. Meetings every second Thursday of the month, 6 pm, 2174 W. Foothill Blvd., #E, Upland, CA 91786. Contact Franz Ende (same address) for info, or call him at (714) 985-4477.

KAYPRO

Lakewood/Long Beach + KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

LEADING EDGE

Leading Edge User's Group. A user's group of predominantly Leading Edge users and other similar machines with high clock speed. Public domain software, demos of software/hardware. No fees. Meetings 7:00 pm, 2nd Wednesday of the month, 12792 Valley View, Suite F, Garden Grove, Contact Dana Nutter or Bruce Fruchter, (714) 891-2001 for information.

LISA

The Lisa Club of Los Angeles This is a brand new club just forming for Lisa owners. Meetings are scheduled to be the first Monday of each month. They have no permanent meeting place as of yet, but for information call (213) 852-4994.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Membership fee is $25/yr or $15/yr for students. Membership includes 12 issues of MACDIGEST newsletter, access to public domain library, BBS, discounts at local stores. Meetings at Madison Elementary School, 11th and Arizona Ave., Santa Monica, 2nd Thursday of the month. Contact J. Baram, (213) 392-5697 for information.

a **LA MAC.** A networking and information organization for Macintosh users. Regional meetings three times monthly in varying locations in LA area. Contact Ron Bastone, P.O. Box 27429, Los Angeles, CA 90027. (213) 462-2860.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Bo 4297, Burbank, Ca 91503, (818) 848-1277.

NEC

Orange County NEC Users Group (OCNUG) Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

OSBORNE

Osborne National Users Group. Anyone interested in CP/M computer systems is welcome. Free admission. Speakers, questions and answers. Join our group for $10.00 yr. and copy public domain software from library. Meetings at 20630 Lassen St., Chatsworth, 2nd Friday of the month, 7:00 pm. Contact Alicia Fahey, P.O. Box 424, Northridge, CA 91328, or call (818) 709-6202 for more info.

Osborne Komputer Owners Klub (OKOK) meets 2nd Tues./mo. at 6:30 pm on the Cal-Tech campus in the Winnette Lounge Building on San Pasqual Street in Pasadena. Contact Lionel Sorraco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

The Orange County TRS-80 Group This club is for all TRS users from beginning to expert. Meetings take place the third Sunday of every month at Chapman College, 1:30 pm. For info call 638-7889 after 7:00 pm.

The California Computer Federation, Spearheaded by some of the best authorities on the TRS-80 color computer, the California Computer Federation promises to be a huge success. For additional informatkion write to CCF Info, 366 W. Providencia, Burbank, CA 91305, or phone BBS #s (818) 886-6041 or (818) 787-0433. Meetings in Van Nuys area, fourth Tuesday of each month.

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TEXAS INSTRUMENTS

LA 99er Computer Club TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

West Side TI Texas Instruments support group forming, users only, to map, trade, barter and exchange ideas, knowledge, and PD software. Meetings 3rd Tuesday of the month. Contact Fred L. Russo for information: 2021 Ocean Ave. #126, Santa Monica, CA 90405, (213) 392-3217.

TEXAS INSTRUMENTS

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Marcus Swed, (818) 366-0886, 6-9 pm, or Jim Berry, (805) 255-7583, 4-9 pm. Meetings 2nd Tuesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

WANG

Wang WP Users Group. Meets 4th Thurs. of month, 6 pm. Monthly newsletter, speakers, questions, information network, products. Call for meeting place: Cindy Randoll, (818) 980-6622.

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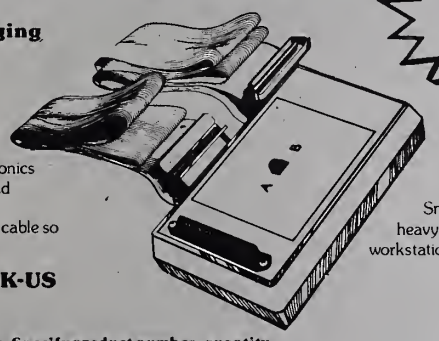

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Fonts, Fabulous Fonts

By Barbara Leone

I admit it, I'm a fonts fanatic. I decided to write about fonts this month just so I could try out some of the great new programs on the market these days.

Surprisingly, not everyone with a Macintosh knows how to move fonts from program to program. It's really quite simple. On the system disk provided with your computer there's a program call Font Mover, which you use to move fonts from one disk to another. The fonts are catalogued in the Font Master's dialog box. The dialog box will also tell you how much disk space is left when moving fonts.

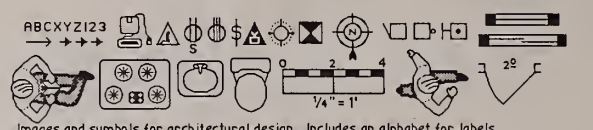
Put your system disk in one drive and the disk with your fonts in the other. Click the open button for the disk containing your fonts. Open the system disk and eject it. Insert the disk you want to move the fonts onto and click the copy button in the direction of the destination disk. That's it.

I have been working with some wonderful new fonts from a program called *Fluent Fonts* (by Casady Company, P.O. Box 223779, Carmel, California 93922). This program has some of the best fonts I've ever seen: everything from 14 point Hebrew characters called Mazel Tov to MathMeteor — 124 symbols used in math, chemistry, meteorology, and even yachting. *Fluent Fonts* has something for everyone, even you hackers out there. The font called Hacker comes in 18 point: it's a collection of letters, numbers and symbols that look like buttons on the keyboard. Hacker also has fun little icons like the bomb used in those restart dialog boxes, the lasso found in *MacPaint* and many more. *Fluent Fonts* even has symbols for circuit design and architecture. It has Polish characters and eighty-one symbols used in astronomy and biology. I particularly like the Borderline font, with 58 styles to choose from, some including corners. These fonts go on and on. Other fonts like Gloss and Portland are great for headlines and graphic arts. The Casady Company is also planning to come out with fonts for the LaserWriter.

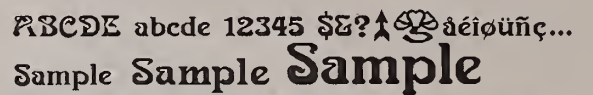
If you are so inclined, you can create your own fonts with a product called *Fontastic* (by Altsys Corporation of Plano, Texas). *Fontastic* is a font editor program: used in conjunction with *MacPaint*, it lets you create your own custom fonts or redesign existing fonts.

With *Fontastic* you can also smooth out existing character fonts to optimize the printed result, make fonts any size you wish, define foreign language fonts or other special fonts, or add special symbols to existing fonts. Using *Fontastic* is much like using Fatbits in *MacPaint*. Characters can be styled; **bold**, *italic*, underline, shadow, condensed, expanded or inverted. Point sizes can be anywhere from 1 to 127 points; widths range from 0 to 254 points.

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with all sizes of business training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.



Images and symbols for architectural design. Includes an alphabet for labels.



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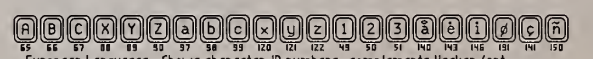
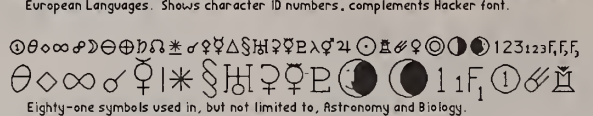
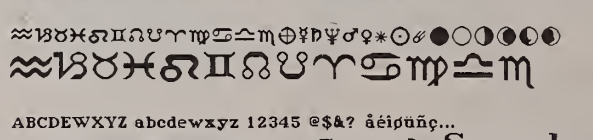


European Languages. Shows character ID numbers, complements Hacker font.



Eighty-one symbols used in, but not limited to, Astronomy and Biology.



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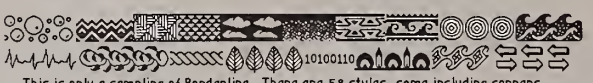
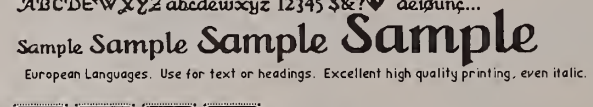
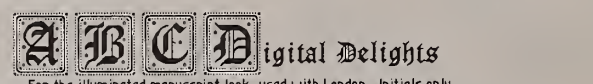


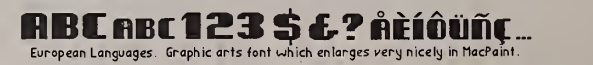
This is only a sampling of Borderline. There are 58 styles, some including corners.



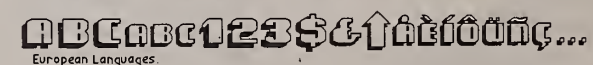
European Languages. Use for text or headings. Excellent high quality printing, even italic.



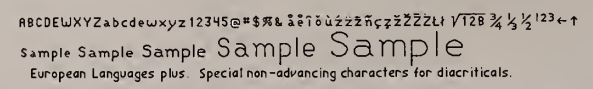
For the illuminated manuscript look, used with London. Initials only.



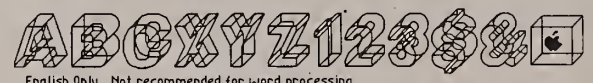
European Languages. Graphic arts font which enlarges very nicely in MacPaint.



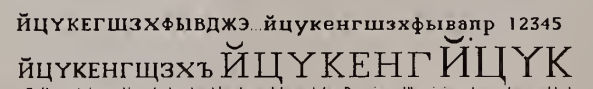
European Languages.



European Languages plus. Special non-advancing characters for diacriticals.

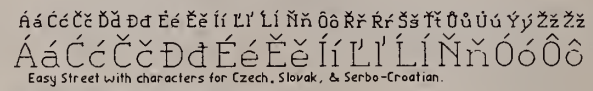


English Only. Not recommended for word processing.



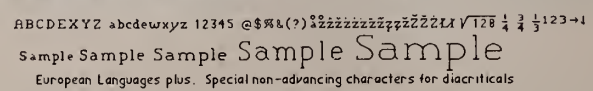
Follows international standard keyboard layout for Russian. Ukrainian characters added.

Blends with Easy Street for multilingual documents.



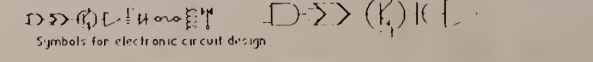
Easy Street with characters for Czech, Slovak, & Serbo-Croatian.

Initials only. For the illuminated manuscript look. Use with Venice



European Languages plus. Special non-advancing characters for diacriticals

English only. Inspired by the Irish Book of Kells.



Symbols for electronic circuit design

***Fluent Fonts* offers a large number of additional options for the Macintosh font fanatic, including a wide variety of alphabets and symbols.**

Altsys is planning to come out with a program for creating LaserWriter fonts, too. As far as Font editors go this one looks like it is going to be the leading edge. Casady Company swears by it, and the people at Altsys say some of the other font program producers are converting over to Fontastic because they find it the easiest product to use, as well as the most sophisticated. Those of you who are looking for a way to create fancy fonts of your own, or want to get into the fonts business, *Fontastic* is the way to go.

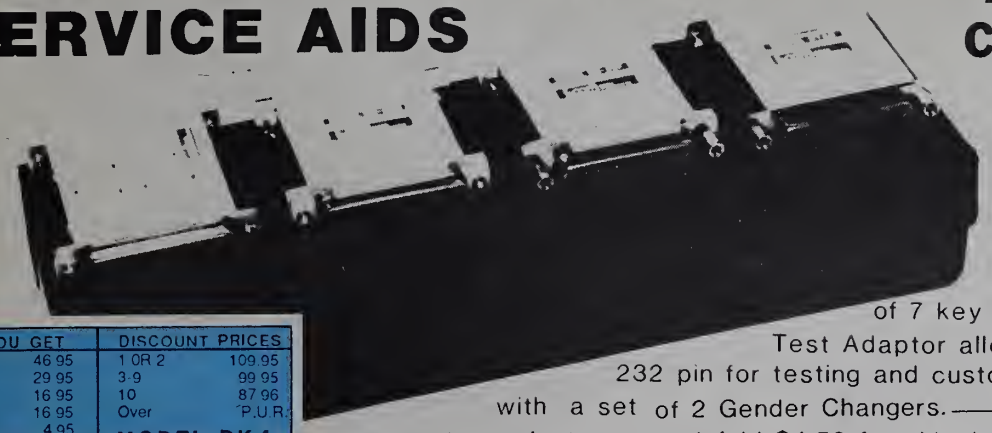
If you are looking for new fonts for your Laser Writer, Century Software in Los Angeles, California has come out with a product called *LaserFonts*. Until *LaserFonts*, the LaserWriter only came with four fonts: Helvetica, Times, Courier and a symbols font. The *LaserFonts* have been created to make the Macintosh and the LaserWriter operate like a typesetter. They include a set of printer's bullets and spaces (em, en and thin), not included in any other fonts; *LaserFonts* also features the accents and diacritical marks you need to write in more than 30 languages. Another entry in the *LaserFonts* series is called *MicroFonts*. *MicroFonts* allows the LaserWriter's built-in fonts to be printed in sizes below nine point from programs like *MacWrite*. This was not previously possible, since the standard Apple font size menu does not allow the user to select sizes below nine point. In addition to *LaserFonts*, Century Software has another fonts program for general use (meaning it works with the Imagewriter) called *UltraFonts*. *UltraFonts* has a set of 21 fonts, including 19 text fonts and one for making borders, boxes and symbols. Another of their packages, the Technical and Business Set, features more than 200 technical symbols, three Greek fonts (including diacritical marks), and fonts for making multi-level math equations.

Another package by T/Maker Graphics in Mountain View called *ClickArt Letters* has big letters, up to 72 point, for posters, overhead transparencies, and other large-size applications. *Mac the Knife Volume 2* by Miles Computing in Canoga Park, California, and *FontPak* by Powertools Software in San Diego, can also add some more variety to your collection of fonts. Another one I am particularly fond of is called *DecoWriter Fonts* by Sea-ess Graphics Company in Olathe, KS. *DecoWriter Fonts* contains thirteen decorative character sets. These fonts are very striking visually, and would do well for the creation of certain headings, labels or other graphic applications. Sea-ess Graphics Company also has *DecoWriter Letter*, which contains two complete sets of Gothic and Roman alphabetic characters.

As any Macintosh user would probably agree, one of the most exciting things about writing, or creating any kind of text on the Macintosh, is the ability to express your ideas with interesting fonts in all of their different sizes and styles. If I had to pick one of these packages as the best starter program, it would be *Fluent Fonts*. There is no doubt it is the most for the money. For you LaserWriters, *LaserFonts* is the way to go. □

RS232 DATA COM SERVICE AIDS

An Excellent Christmas Gift



WHAT YOU GET		DISCOUNT PRICES	
DLMS-2	46.95	1 OR 2	109.95
DTAS	29.95	3-9	99.95
DG25F	16.95	10	87.96
DG25M	16.95	Over	P.U.R.
Carry Case	4.95	**MODEL DK4**	
Total Value	115.75		

Four of our most popular RS232 devices in a hand some carry case. Our best Data Line Monitor shows high, low, and open status of 7 key signal lines. The mini Data Test Adaptor allows access to every RS-232 pin for testing and custom interfacing, and comes with a set of 2 Gender Changers. ——— A limited time offer at reduced prices - Just compare! Add $4.50 for shipping and handling regardless of quantity. Use our Toll Free calling for prompt delivery.

DATA LINE MONITOR

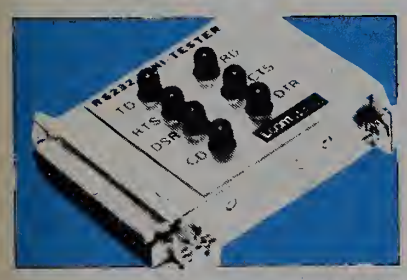
A minature **DATA LINE MONITOR** allows the user to determine the status of the seven key signals of the RS-232 data path. All 25 pins wired through. Dedicated red LED's report the status of:

Transmit Data (TD) pin 2
Receive Data (RD) pin 3
Request to Send (RTS) pin 4
Clear to Send (CTS) pin 5
Data Set Ready (DSR) pin 6
Data Carrier Detect (DCD) pin 8
Data Terminal Ready (DTR) pin 20

Choice of Plastic or Chrome Metal Housing.

MODEL	TYPE	GENDER	1-9	10-24	25-99
DLM	Std.	M-F	35.45	32.26	28.36
DLMS	Metal	M-F	36.95	33.62	29.56

DATA LINE MONITOR



New Deluxe Version of our popular **DATA LINE MONITOR** is now available with red and green LED's to indicate Hi, Low or Open conditions. Metal shell construction takes abuse.

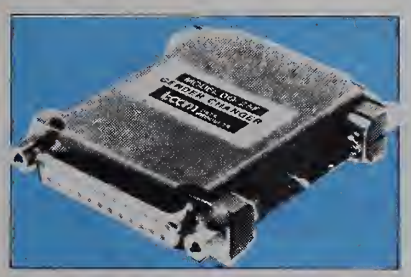
MODEL	TYPE	GENDER	1-9	10-24	25-99
DLMS-2	Metal	M-F	46.95	42.72	37.56

RS232 LINE PROTECTOR

RS-232 DATA LINE SURGE PROTECTORS Guard against lightning and electrical spikes entering the RS-232 ports. Metal-Oxide varistors on key signal lines act to clamp surges above 27 volts without affecting normal operation. This compact adaptor mounts permanently in series. All 25 lines are wired through. To be most effective Surge Protectors should be provided on both ends of a long line

MODEL	Lines	1-9	10-24	25-99
DSPS-3	2,3 & 7	24.95	22.70	19.96
DSPS-4	2,3,7, & 20	26.95	24.52	21.56
DSPS-5	2,3,4,5,& 7	28.95	26.34	23.16
DSPS-7	2 thru 7 & 20	32.95	29.98	26.36

GENDER CHANGER



RS-232 GENDER CHANGERS - Are handy devices enabling the mating of wrong sex cables to equipment or to other cables. ABS encased or metalized to offer maximum shielding, will withstand extensive abuse. Four models fill most requirements.

MODEL	TYPE	GENDER	1-9	10-24	25-99
DG-25F	Std	F-F	16.95	15.42	13.96
DG-25M	Std.	M-M	16.95	15.42	13.96
DGS-25F	Metalized	F-F	17.95	16.33	14.36
DGS-25M	Metalized	M-M	17.95	16.33	14.36

RS232 ADAPTOR KIT

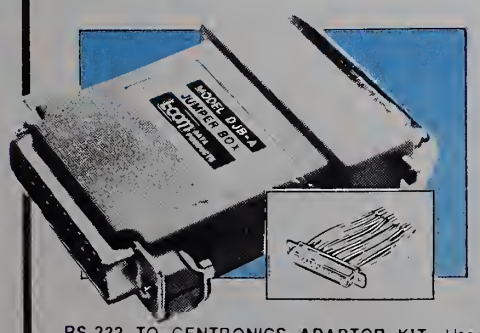
DO IT YOURSELF KIT - Allows the creation of many types of RS-232 adaptors. The following components are included in the assortments.

2 ea. 25 Pin D-Sub Connectors (see gender below)
2 ea. Snap-on hall covers (UL 94VO)
1 set Hardware for each connector end

D-Sub connectors have solder cup terminations to accept wire leads. Choice of Plastic or Chrome Metal Housing

MODEL	TYPE	GENDER	1-9	10-24	25-99
DIY	Std.	M-F	10.95	9.96	8.76
DIYS	Metal	M-F	12.45	11.33	9.96
DIYS-F	Metal	F-F	12.45	11.33	9.96
DIYS-M	Metal	M-M	12.45	11.33	9.96

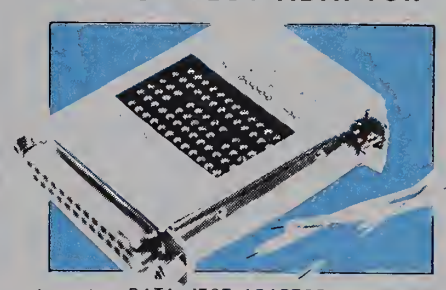
SERIAL-PARALLEL ADAPTOR KIT



RS-232 TO CENTRONICS ADAPTOR KIT - Used to customize your own printer adaptors. The DB-25 has 25 flying leads, ready to be soldered to any of the 36 pin Centronics. Your choice of standard or metalized covers.

MODEL	TYPE	GENDER	1-9	10-24	25-99
DJBA	Std.	M-M	24.95	22.70	19.95
DJBA-2	Metalized	M-M	26.95	24.52	21.56

RS232 TEST ADAPTOR



A minature **DATA TEST ADAPTOR** provides ready access to all 25 lines of the RS-232 interface. Only 2" x 2.5" x 0.5" in size. Has one male and one female connector for inline use. All 25 pins of each connector terminate to individual sockets which allow the two connectors to be interwired or jumped in any pattern. Comes complete with 20 jumper wires. Shielded Chrome Metal construction.

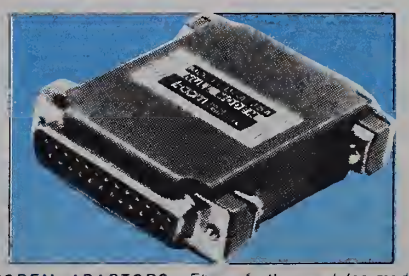
MODEL	TYPE	1-9	10-24	25-99
DTAS	Metal	23.95	27.25	23.96

RS232 JUMPER BOX

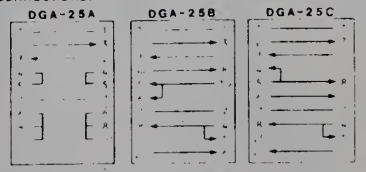
DATA JUMPER BOX - Used to customize RS-232 interface devices. All 25 pins of the D-Sub Connectors terminate to 25 solder pads. The PC Board layout makes it easy to wire your own adaptor. Supplied with 25 wires already stripped for permanent wiring. Many interfaces could be built, null modems, pin reversers, you name it. Supplied with PC Board already soldered in place. Snap-on Chrome Metal covers and appropriate hardware are unassembled. Your choice of genders.

MODEL	TYPE	GENDER	1-9	10-24	25-99
DJBS	Metal	M-F	21.95	19.97	17.56
DJBS-F	Metal	F-F	21.95	19.97	17.56
DJBS-M	Metal	M-M	21.95	19.97	17.56

MODEM ADAPTOR



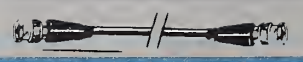
MODEM ADAPTORS - Eliminate the need for modems when connecting local terminals together or terminals to computer. Circuit codes are shown to identify pin connections.



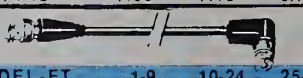
MODEL	TYPE	GENDER	1-9	10-24	25-99
DGA-25A	Std.	M-F	16.95	15.42	13.56
DGA-25B	Std.	M-F	16.95	15.42	13.56
DGA-25C	Std.	M-F	16.95	15.42	13.56

Ask us to quote on Custom RS232 Adapters

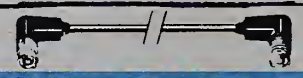
COAXIAL CABLES



MODEL-FT	1-9	10-24	25-99
CC58C-1	3.55	3.23	3.05
CC58C-1.5	3.70	3.37	3.18
CC58C-2	3.85	3.50	3.31
CC58C-2.5	4.10	3.73	3.53
CC58C-4	4.40	4.00	3.78
CC58C-5	4.65	4.23	4.00
CC58C-10	6.05	5.51	5.20
CC58C-15	7.45	6.78	6.41
CC58C-25	10.75	9.33	9.25
CC59B-1	3.65	3.32	3.14
CC59B-2.5	4.00	3.64	3.44
CC59B-5	4.75	4.32	4.09
CC59B-10	6.25	5.69	5.38
CC59B-15	7.75	7.05	6.67
CC59B-25	10.75	9.78	9.25
CC59B-50	18.25	16.61	15.70
CC59B-100	33.25	30.26	28.60
CC62A-1	3.60	3.28	3.10
CC62A-2.5	3.95	3.59	3.40
CC62A-5	4.70	4.28	4.04
CC62A-10	6.15	5.60	5.29
CC62A-15	7.60	6.92	6.54
CC62A-25	10.50	9.56	9.03
CC62A-50	17.75	16.15	15.27
CC62A-100	32.25	29.35	27.74
CC174-1	3.60	3.28	3.10
CC174-1.5	3.75	3.41	3.23
CC174-2	3.90	3.55	3.35
CC174-2.5	4.05	3.69	3.48
CC174-4	4.50	4.10	3.87
CC174-5	4.80	4.37	4.13
CC174-10	6.35	5.78	5.46
CC174-15	7.90	7.19	6.79



MODEL-FT	1-9	10-24	25-99
CC58C-1RA	4.90	4.46	4.21
CC58C-1.5RA	5.05	4.60	4.34
CC58C-2RA	5.20	4.73	4.47
CC58C-2.5RA	5.35	4.87	4.60
CC58C-3RA	5.50	5.00	4.73
CC58C-4RA	5.80	5.28	4.99
CC58C-5RA	6.10	5.55	5.25
CC58C-7.5RA	6.85	6.23	5.89
CC58C-10RA	7.60	6.92	6.54
CC59B-1RA	4.90	4.46	4.21
CC59B-1.5RA	5.05	4.60	4.34
CC59B-2RA	5.20	4.73	4.47
CC59B-2.5RA	5.35	4.87	4.60
CC59B-3RA	5.50	5.00	4.73
CC59B-4RA	5.80	5.28	4.99
CC59B-5RA	6.10	5.55	5.25
CC59B-7.5RA	6.85	6.23	5.89
CC59B-10RA	7.60	6.92	6.54
CC62A-1RA	4.90	4.46	4.21
CC62A-1.5RA	5.05	4.60	4.34
CC62A-2RA	5.20	4.73	4.47
CC62A-2.5RA	5.35	4.87	4.60
CC62A-3RA	5.50	5.00	4.73
CC62A-4RA	5.80	5.28	4.99
CC62A-5RA	6.10	5.55	5.25
CC62A-7.5RA	6.85	6.23	5.89
CC62A-10RA	7.60	6.92	6.54
CC174-1RA	4.90	4.46	4.21
CC174-1.5RA	5.05	4.60	4.34
CC174-2RA	5.20	4.73	4.47
CC174-2.5RA	5.35	4.87	4.60
CC174-3RA	5.50	5.00	4.73
CC174-4RA	5.80	5.28	4.99
CC174-5RA	6.10	5.55	5.25
CC174-7.5RA	6.85	6.23	5.89



MODEL-FT	1-9	10-24	25-99
CC58C-1RA2	6.25	5.69	5.38
CC58C-1.5RA2	6.40	5.82	5.50
CC58C-2RA2	6.55	5.96	5.63
CC58C-2.5RA2	6.70	6.10	5.76
CC58C-3RA2	6.85	6.23	5.89
CC58C-4RA2	7.15	6.51	6.15
CC58C-5RA2	7.45	6.78	6.41
CC58C-7.5RA2	8.20	7.46	7.05
CC58C-10RA2	8.95	8.14	7.70
CC59B-1RA2	6.25	5.69	5.38
CC59B-1.5RA2	6.40	5.82	5.50
CC59B-2RA2	6.55	5.96	5.63
CC59B-2.5RA2	6.70	6.10	5.76
CC59B-3RA2	6.85	6.23	5.89
CC59B-4RA2	7.15	6.51	6.15
CC59B-5RA2	7.45	6.78	6.41
CC59B-7.5RA2	8.20	7.46	7.05
CC59B-10RA2	8.95	8.14	7.70
CC62A-1RA2	6.25	5.69	5.38
CC62A-1.5RA2	6.40	5.82	5.50
CC62A-2RA2	6.55	5.96	5.63
CC62A-2.5RA2	6.70	6.10	5.76
CC62A-3RA2	6.85	6.23	5.89
CC62A-4RA2	7.15	6.51	6.15
CC62A-5RA2	7.45	6.78	6.41
CC62A-7.5RA2	8.20	7.46	7.05
CC62A-10RA2	8.95	8.14	7.70
CC174-1RA2	6.25	5.69	5.38
CC174-1.5RA2	6.40	5.82	5.50
CC174-2RA2	6.55	5.96	5.63
CC174-2.5RA2	6.70	6.10	5.76
CC174-3RA2	6.85	6.23	5.89
CC174-4RA2	7.15	6.51	6.15
CC174-5RA2	7.45	6.78	6.41
CC174-7.5RA2	8.20	7.46	7.05

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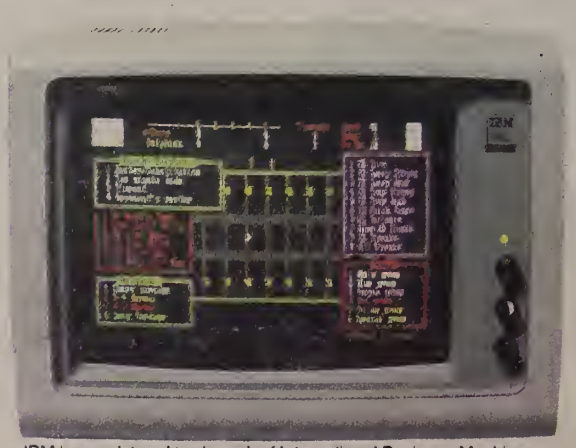

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